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CHEETAL

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Tourism Tumult : The Way Out

**Umred-Karhandla Wildlife
Sanctuary**

Conservation Within Cages

The Sting

THE FORGOTTEN TIGERLANDS

**Valmiki : The Story of Bihar's
Forgotten Tigers**

Dampa : Out of the Woods



'Siyah-Gosh' : Over the last century, only a handful of photographers have photographed a Caracal (*Caracal caracal*) or the *siyah-gosh* ("black-eared") as it is known in Persian. The incredible image above was taken by **Dr. Dharmendra Khandal** in Ranthambore Tiger Reserve, Rajasthan. Although widely distributed across many habitat types of Africa and Asia right upto India, very little is known about the elusive Caracal. In India the few studies carried out on the ecology and distribution of the Caracal suggest that their distribution range overlaps with the extinct Asiatic Cheetah. In princely India, when the sport of *Coursing with Cheetahs* was at its zenith, it wasn't uncommon to find this sport being accompanied by yet another sport called "Hunting with Caracals", with the Cheetah's smaller sidekick - the Caracal - being the showstopper for this sport. Since no concrete studies on the Caracal have been carried out in India, their wild population status remains unknown. However anecdotal evidence suggests a decrease throughout Asia, with habitat loss as the primary driver. With increasing Caracal habitat being brought under the plough, their future doesn't seem bright.

Front Cover : A Tiger in Ranthambore Tiger Reserve – A portrait by **Dr. Dharmendra Khandal**.

Back Cover : Lion-tailed Macaque with a baby – A portrait by **Kalyan Varma**, one of India's finest wildlife photographers. Only 3000-3500 of these Old World Monkeys, endemic to the Western Ghats, survive today.

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FROM THE EDITOR'S PEN

This issue of Cheetal, comes to you rather late. The reason is itself visible in the new refurbished look of our 53 year old journal. In the General Body meeting of 29th April 2012, suggestions were made by the Society's members for further improvement of the journal. Raza Kazmi, one of the Society's youngest life members, and a B.E. student from L.N.C.T. Bhopal, Madhya Pradesh, volunteered to reinvigorate Cheetal and completely reformat the journal to give it a new look. He not only edited and designed the entire issue, but also contacted many important members of the Society, a number of well-known field officers and reputed conservationists to contribute their quality articles for this issue. He has succeeded in getting some excellent material for the issue and has devoted a lot of his valuable time to give this beautiful new look to our journal. We have included him in our Editorial Board for his continued contribution in future issues of Cheetal. It was solely his ingenuity and effort that could bring this issue in its present form before you. Raza is extremely grateful to his friend Nandini Velho – PhD student at the James Cook University, Australia and research associate with the National Centre for Biological Sciences, Bengaluru – for the immense editorial assistance he got from her. Her support and cooperation towards Cheetal is highly appreciated and we fall short of words to acknowledge our gratitude towards Nandini for all the time and effort that she voluntarily put in for Cheetal.

We are also keen on hosting Cheetal online for wider acceptance. Hopefully our next issue will be uploaded online with all the colored fonts and photographs. At the moment, fund limitations have restricted us to printing just a few colored photographs.

Readers would be glad to know that we have made some major improvements in our infrastructure, and there is a marked improvement in the Society's library. There is good news for our outstation members too, as we can now offer them guest rooms duly furnished in our new office premises at nominal rates.

We request our members to send in their articles for the upcoming issue of Cheetal. Comments, feedbacks and suggestions by individual members for further improvement of the journal are welcome and will be published in the upcoming issues.

A.S. NEGI

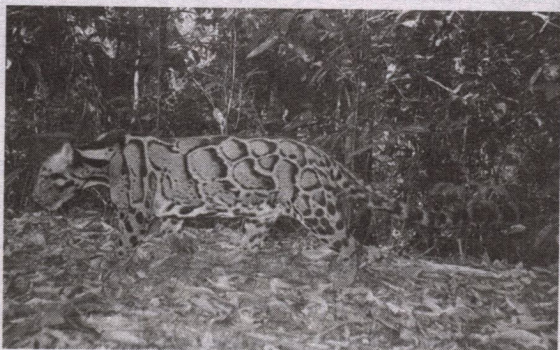
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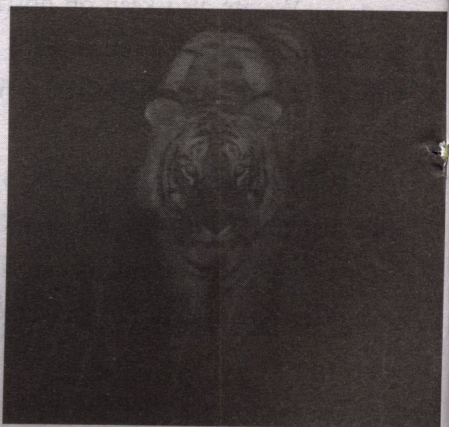
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Managing the beautiful and remote forests of the Naxal dominated Palamu Tiger Reserve was a challenge even in the mid 90's. **S.E.H. Kazmi**, who served as the D.F.O. at Palamu from 1991-1998, went through his archives and pulled out a 16 year old article that recounts a gripping and inspiring tale. He has now returned to his first love –Palamu– as the park's Field Director.

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VALMIKI: THE STORY OF BIHAR'S FORGOTTEN TIGERS

By Dr. Samir Kumar Sinha



Valmiki Tiger Reserve (VTR), the only Tiger Reserve in the state of Bihar, forms the easternmost limit of the Shiwalik Hills-Gangetic Plains Landscape (Jhala et al., 2008). The big cats of this little known tiger reserve constitute one of the five tiger populations on the Indian side of the Himalayan terai. Other populations include Rajaji and Corbett in Uttarakhand and Dudhwa-Pilibhit & Suhelwa in Uttar Pradesh. Sadly, viable corridors linking Valmiki to other terai forests of India have been lost over time. However, there still is some hope for the long term persistence of VTR's big cats; and this flicker of hope emanates from the contiguity of Valmiki's forests with Chitwan National Park and Parsa Wildlife Reserve in Nepal through its northern and eastern borders. Hence, it wasn't much of a surprise when Dinerstein et al. (2006) suggested according this landscape regional priority in tiger conservation.

Located in the West Champaran district of Bihar, the 880.78 sq. km. VTR includes Valmiki National Park (335.64 sq. kms.) and Valmiki Wildlife Sanctuary (545.14 sq. kms.). The immense conservation potential that Valmiki withholds was recognized as far back as in 1978 when a part of the *Champaran forests* (as VTR was known in those days) was notified as a wildlife sanctuary. By 1990, the remaining portions had also been accorded the status of a sanctuary and a national park. In 1994, these forests of West Champaran were finally brought

under the purview of Project Tiger. It's been a great misfortune for Valmiki that in spite of being endowed with rich biodiversity, it never received much attention. The primary reason for this indifference, apart from Valmiki's remote location, was the fact Valmiki was always overshadowed by the famed forests of Palamu in erstwhile South Bihar. Compared to Valmiki, Palamu was bigger, better-known and was believed to harbor the greatest potential for the long term survival of tigers in Bihar. Moreover, the fact that in those days the forests of Champaran were under the influence of bandits and kidnapping gangs who used this forest as a safe haven due to its proximity with international and interstate borders, didn't do much good for Valmiki's cause either.

streams, where he spent many a nights photographing Valmiki's Tigers who were lured at the spot using baits – serve as a somber reminder of Valmiki's glorious past. The images Sri Shahi shot here were perhaps one of the first images of Bihar's tigers.

Nothing offers a better example of the historical short-shifting that Valmiki has



A view of Valmiki Tiger Reserve's landscape

The association between Valmiki and Palamu goes back to many a decades. Late Sri R.B. Singh, a forester who served Valmiki for many years, right from his starting days as a Range Officer to his last years as a Divisional Forest Officer (in-charge), once informed me that a select few staff from Valmiki had undergone a few training workshops at Betla National Park (part of Palamu Tiger Reserve) in 1971-72 to learn the techniques of pugmark census so that they could then apply their newfound skills to count the big cats of Valmiki. Late Sri S. P. Shahi, the renowned wild-lifer and undivided Bihar's legendary forest officer often toured the forests of Champaran to photograph Valmiki's big cats. Crumbling remains of his bunker-type hideouts at *Ghartinia nala* – his favorite tri-junction of

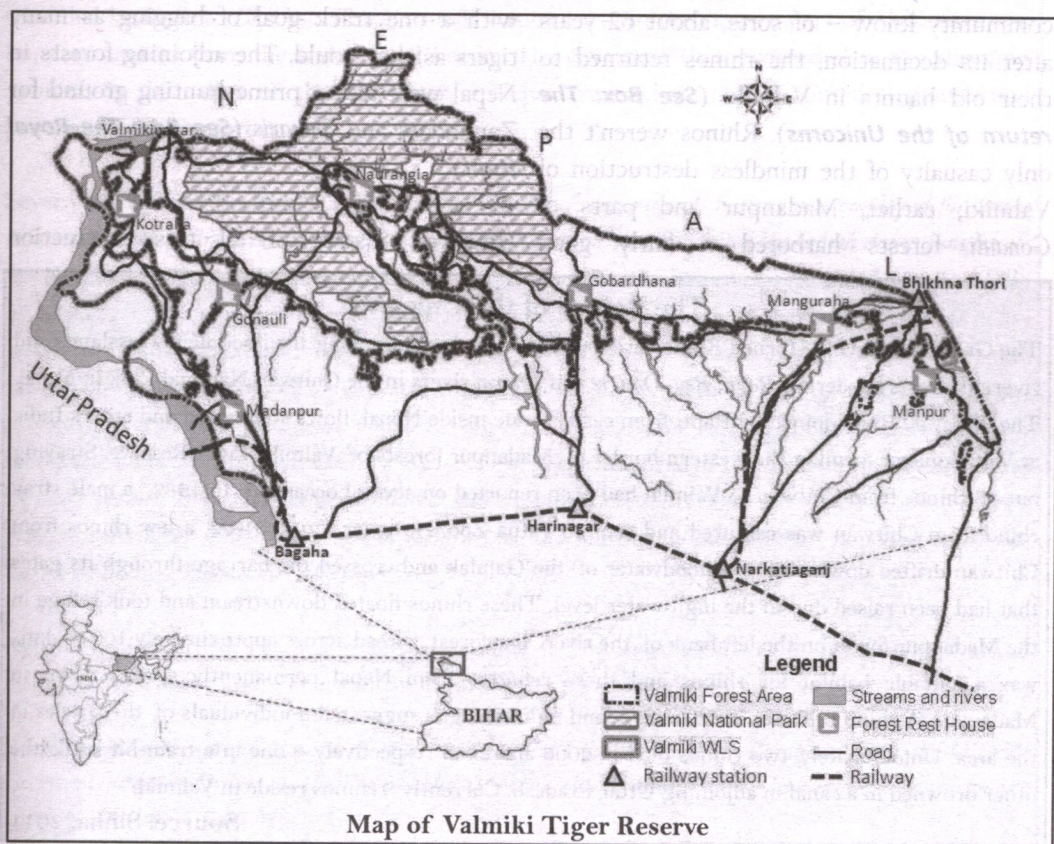
received than the fact that when Project Tiger was launched in the country in 1972-73, Palamu was declared as one of the nine pioneer Tiger Reserves, but the tiger bearing forests of Valmiki were handed over to the Forest Development Corporation for commercial exploitation. In the coming years, 'developmental activities' like the construction of a barrage and canals to divert water of the *Gandak* river resulted in clearing of prime tiger forest for establishment of colonies, roads and other infrastructure. This eventually culminated into the fragmentation of the forest in the north-western portion of the reserve. Construction of an embankment to lay a railway track inside the reserve further devastated a large forest chunk and changed the ecology of the area.

A JOURNEY THROUGH HISTORY

Historically, the Valmiki forests were owned by two erstwhile Zamindari estates: Bettiah Raj and Ramnagar Raj. The management schemes for the forests of Bettiah Raj were prepared by forest officials, but the forests of Ramnagar Raj were never exploited scientifically. The Ramnagar Raj forests were leased out to a number of timber companies like M/s Dearn & Co. and Nepal Timber Co. for many years. During and post World War II, the rate of felling of these forests reached an alarming rate. Huge swathes of prime forest land were being clear-felled in order to settle more and more people and at the same time earn as much money as possible from the felled forests (Chaudhury, 1960). And so it doesn't come

across as much of a surprise when District Gazetteers of Champaran mentioned a decline in the forest cover of the district to the tune of 930 sq.kms. to 1106 sq.kms. between 1907 and 1960. The reason given was an increase in the demand of land for sugarcane cultivation and the mismanagement of forests. The Bihar Private Forest Act enacted in 1946-47 finally wrested control of the private forests from its owners, but by then a lot of damage had already been done. In 1950 and 1955, bulk of the forested tracts of Champaran, covering an area of 909.88 km², were declared as 'Protected Forest' as per the provisions of the Indian Forest Act, 1927.

However, in spite of all the mismanagement and heavy felling of the forests, Valmiki's terai



forests were regarded as one of the best forests in the state for 'game hunting'. The forest comprised of 8 shooting blocks: *Thori, Raghia, Gobardhana, Bhimbandh, Purainia, Kosil, Bhapsa* and *Pakhnaha*. However, with a combined onslaught of 'hunting for sport', poaching and felling of forests, it wasn't long before the fabled wildlife of Valmiki started disappearing, and by 1960 a few animals had already gone extinct from this area (Chaudhury, 1960). The first large mammal to go extinct was the Great Indian One-horned Rhinoceros, with the last rhino being seen and shot in 1939. These pachyderms used to inhabit the forests of *Rampur – Madanpur – Balgangwa – Hathimalkhanta* in *Madanpur Range* (Jha, 1971). But then in a miracle – one about which very few in the conservation community know – of sorts, about 62 years after its decimation, the rhinos returned to their old haunts in Valmiki (**See Box: The return of the Unicorns**). Rhinos weren't the only casualty of the mindless destruction of Valmiki; earlier, *Madanpur* and parts of *Gonauli* forests harbored a fairly good

population of black bucks. The species occurred in such good numbers back in the hey days of Valmiki that they used to be shot from the verandah of the *Madanpur Forest Rest House* in the late 1950s and early 1960s (Pers. comm. Late R. B. Singh). Sadly, today this antelope has become very rare as the few that survived the hunting spree were also lost over the years mostly due to habitat loss. Similarly, another medium-sized antelope, the *Chausingha* or the four-horned antelope also became locally extinct due to hunting and habitat loss.

During the reign of the *Darbhangha Maharaj*, British hunters and members of the royal families of Nepal were frequent visitors to the Champaran forests, and they used to come with a one track goal of bagging as many tigers as they could. The adjoining forests in Nepal were also a prime hunting ground for Zamindars and *Shikaris* (**See Box: The Royal Hunt**).

However, inspite of all this destruction

The Return of the Unicorns

The Great Indian One-Horned Rhinos are found in high densities along the floodplain grasslands and riverine forests bordering *Rapti, Reu, Dungre* and *Icharni* rivers in the Chitwan National Park in Nepal. The *Narayani* River, joined by *Rapti* from eastern side inside Nepal, flows southward and enters India at Valmikinagar forming the western border of *Madanpur* forests of Valmiki Tiger Reserve. Straying out of rhinos from Chitwan to Valmiki had been reported on several occasions. In 1982, a male stray rhino from Chitwan was captured and sent to Patna Zoo. However, in 2001-02, a few rhinos from Chitwan drifted down with the floodwater of the Gandak and crossed the barrage through its gates that had been raised due to the high water level. These rhinos floated downstream and took refuge in the *Madanpur* forest on the left bank of the river. The forest, spread across approximately 100 sq. km., was a suitable habitat for rhinos and these refugees from Nepal permanently settled down in *Madanpur*. A rhino calf was born in 2003 and indirect signs suggested 5 individuals of the species in the area. Unfortunately, two rhinos died in 2006 and 2008 respectively – one in a train-hit while the other drowned in a canal in adjoining Uttar Pradesh. Currently 3 rhinos reside in Valmiki.

Source: Sinha, 2011

and exploitation that Valmiki was undergoing in the mid 20th century, there were a few silver-linings as well. After 1956-57 several restrictions on shooting of wild animals were imposed. Elephants and rhinoceros crossing over into Champaran's forests from the adjoining forests of Nepal were completely protected. Besides, shooting was restricted to a fixed number of 'game' in each shooting block every year. Moreover, each shooting

block was given a rest-period of fifteen days after each shooting campaign. Unfortunately, despite these restrictions, illegal hunting of wild animals and game birds continued due to the large scale granting of gun licenses to people with no 'sportsman spirit'. These unethical 'sportsmen' would hunt during the closed season, kill any and every 'game' they would come across, and would even hunt at night using spotlights to transfix the wild

The Royal Hunt

The reign of King George V began on May 6, 1910. As per the suggestions of his advisors, following his coronation in London on June 22, 1911, a coronation ceremony took place at a Durbar in Delhi on December 12, 1911 wherein he was ceremoniously crowned as the King of India and received the homage of numerous Indian Princes and rulers.

The King was a passionate hunter as well, and so after his coronation at the Delhi Durbar, he travelled by train to *Bhikhna Thori*, a small station lying in the eastern part of Valmiki, a few hundred meters from the Indo-Nepal border. His cavalcade then proceeded to the shooting grounds in the valley of the Rui River in Nepal, from where they mounted elephants and proceeded into the forest.

Sever (1993) describes the King's shoot as follows: "*An army of beaters was employed for weeks before the event to drive into a selected area all the big game that inhabited the warm damp jungles of the western Tarai . . . some forty points were selected within the area chosen for the shikar, and kills, usually goats, were tied up so as to establish the number and location of tigers and leopards. They were then hunted in uniquely Nepalese style. The tiger that was reported overnight from a kill was encircled by an enormous ring of elephants and held until dawn and the arrival of the guns. At times, as many as 250 elephants were employed for one circle. As the tiger approached, the ring was contracted until the great cat's escape was cut off. Upon the arrival of the visitors, ten or twelve specially trained elephants were introduced into the circle, which, in some cases was as much as 200 metres in diameter. These proceeded to form a line and march into the patch of jungle in which the tiger was hidden. Eventually, the tiger was flushed out.*"

By the time the King's hunting campaign came to end on December 28, 1911, he had killed 39 tigers, 18 rhinos and 4 bears in the terai forests of Chitwan.

Source: *The Historical Record of the Imperial Visit to India, 1911: Compiled from the Official Records Under the Orders of the Viceroy and Governor-General of India.* (London: Published for the Govt. of India) by John Murray, 1914.

animals, not even sparing females and lactating mothers. And what was most saddening was the fact that the worst offenders, unfortunately, were the government officials and their good friends (Chaudhury, 1960).

Valmiki again faced a great upheaval in the mid-1990's when the 'Operation Black Panther' launched by the state police to flush out criminals from the area took a huge toll on the wild ungulate population of the area which was shot with impunity. Taking a cue from these upholders of law, even the locals heavily poached prey species during this period using unlicensed firearms owned for their self-protection. Poisoning of large carnivores, especially tiger and leopards wasn't uncommon either. Being close to international border, the area was and still is prone to illegal wildlife-product trafficking.

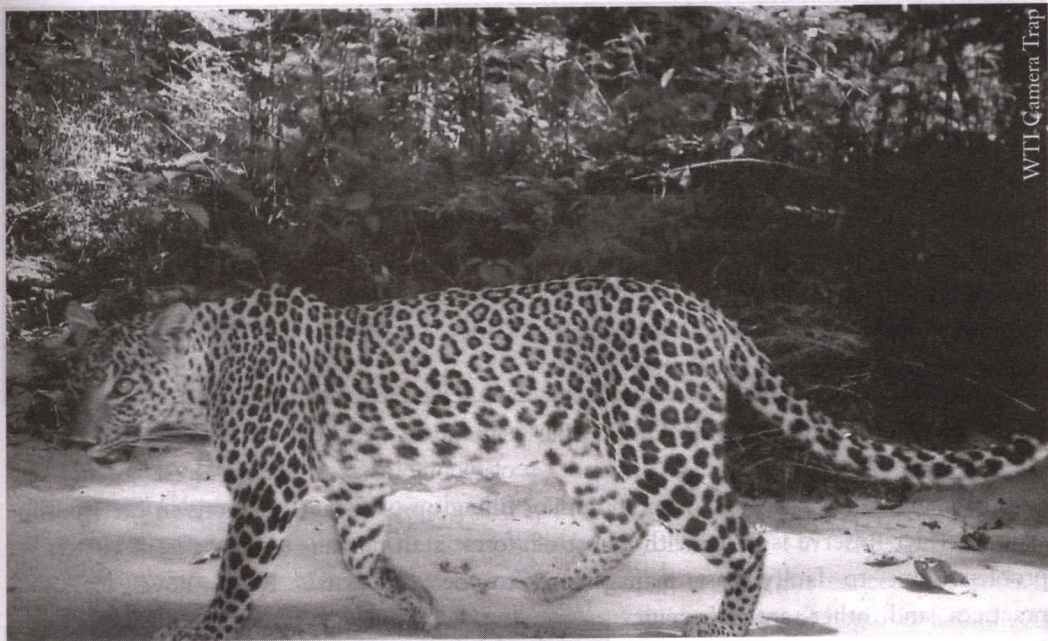
VALMIKI: THE NATURALLY DIVERSE PARADISE

The mainland of Valmiki is comprised of flat alluvial plains, low hills and valleys. Perennial streams such as the *Sonha*, *Pachnad*, *Bhapsa*, *Masan*, *Manor*, *Rohua*, *Dwardah*, *Pandai*, *Singha*, *Kapan* and *Dorham* originating from the Himalayan terai criss-cross the broken undulating terrain of *Someshwar* and *Dun hills* of the tiger reserve, providing sufficient water to both wildlife and the adjoining human habitations.

Forest types in the reserve include: *Bhabar-Dun Sal* (on lower slopes of hills and adjoining flat terrain), *Dry Siwalik Sal* (on rising ground of hills, spurs and ridges), *West Gangetic Moist*

Mixed Deciduous (in Gandak floodplains), *Khair-Sissoo* (in Madanpur block along the Gandak and its tributaries), *Cane brakes* (in moist parts of Madanpur block), *Eastern Wet Alluvial Grasslands* (in Madanpur block), and *Barringtonia swamps* in a small compartment in Madanpur forest (Champion and Seth, 1968). Main tree species include *Shorea robusta*, *Terminalia tomentosa*, *Terminalia belerica*, *Adina cordifolia*, *Miliusa velutina*, *Trewia nudiflora*, *Mallotus philippensis*, *Lagerstroemia parviflora*, *Salmalia malabarica* and *Acacia catechu*. Valmiki represents one of the last remnant forests having a unique combination of *terai-bhabar* vegetation (Johnsingh et al., 2004). *Pinus roxburghii* is also found in some portions of *Raghia* and *Someshwar* forest blocks.

Such varied geological formations and vegetation naturally provides shelter to an incredible diversity of fauna. *Zoological Survey of India* (Director, 1998) has reported 53 species of mammals, 145 species of birds, 10 species of amphibians and 27 species of reptiles from VTR. Key predators of the reserve are *tiger*, *leopard* and *wild dogs* while other carnivores include the *Bengal Fox*, *jackal*, *hyaena*, *fishing cat*, *jungle cat* and *leopard Cat*. Due to decades of exploitation, some instances of which have already been narrated before, the density of tigers in the reserve is low. However, their population in the last few years seems to be making a comeback (**See Box : Status of Tigers**). The Himalayan terai forest support as many as nine species of wild ungulates viz. *sambar*, *chital*, *nilgai*, *wild boar*, *swamp deer*, *hog deer*, *goral*, *barking deer* & the one-horned *Rhinoceros* (Johnsingh et al., 2004). Of these only the *swamp deer* and *goral* has not been reported in Valmiki, while *gaur*



A Leopard slinks past a camera-trap in Valmiki Tiger Reserve. This image – the first daytime capture of a Leopard in Valmiki – hints at a very significant development. Poaching and high human disturbance had turned Valmiki's wild denizens almost completely nocturnal. But this image is a testimony to the fact that with an improvement in Valmiki's management, the tiger reserve's wildlife is once again starting to venture out during the day.

or Indian bison is exclusive to the reserve in Indian terai. Gaur is found in two pockets of the Someshwar Hills in the reserve (Sinha, 2012). Hog deer is restricted to grasslands in Madanpur forest. Sloth bears are uniformly distributed throughout the reserve, save the forests along the Gandak. Rhesus macaque and common langurs can be seen frolicking throughout the reserve and constitute a major portion of the leopard's diet. Indian rock python, king cobra, common cobra, banded krait, common krait, Bengal monitor lizard, tricarinate hill turtle, mugger and the gharial are the common reptiles found in the reserve. Apart from common and exclusive birds of the terai

region, Valmiki harbors a good population of Hill Myna. In the recent years, sightings of the critically endangered Gyps vultures (*G. bengalensis*, *G. himalayensis* and *G. indicus*) have also increased which bodes well for their future in this landscape.



Leopard's smaller cousin, the Leopard Cat, at VTR

Status of Tigers

Tiger density in the reserve is poor. Johnsingh et al. (2004) reported the encounter rate of tiger signs in the reserve lower than many other tiger bearing forests in the terai. As per the latest findings of the All India Tiger Monitoring exercise in 2010, density of the big cats was 1.8 per 100 sq. km., while tiger occupancy in the reserve was 750 sq. km. (Jhala et al., 2011). Low density of tigers in the reserve can be attributed to poor prey base. Breeding of tigers has been recorded regularly. Camera trap monitoring done by the Wildlife Trust of India and the Valmiki Tiger Reserve management has yielded photographic evidences of recruitment of new tigers. However, it is also observed that the cubs get dispersed in the forests of Nepal on the northern side. Probably better prey availability in Chitwan is the driving force behind this.

CONSERVATION PROBLEMS GALORE!

Just like any other protected area in India, Valmiki Tiger Reserve is beset with a host of problems due to faulty past management practices and other anthropogenic factors. The porous international border with Nepal makes the reserve prone to illicit felling of trees, collection of cane, poaching of prey species and trade of wildlife products. Moreover, land disputes between India and Nepal has created an illegal settlement of anti-social elements belonging to both nations at *Susta* near Valmikinagar. The settlers commit forest and wildlife related offences in Valmiki and then quickly take refuge in the disputed area knowing very well that the none of the two countries can act against them there.

The protection system of the reserve is yet to see a major change from the days of Bihar State Forest Development Corporation (BSFDC). And even though the deployment of *Sashastra Seema Bal* (SSB), a paramilitary force, along the Indo-Nepal border has proved to be a

significant deterrent to poaching, the paucity of young and energetic forest guards and filling up of vacant positions in the frontline forest staff remains a serious issue that is yet to be addressed. Right now, makeshift



A Sambar camera-trapped in Valmiki. Low prey density in VTR is primarily responsible for the low density of large predators in the tiger reserve.

arrangements for protection is being done through deployment of local youths and ex-army personnel, but this tattered army of green soldiers isn't enough to guard the whole reserve against innumerable threats.

The most important factor responsible for the low density of large predators like tigers in Valmiki is the low prey-density – mainly medium and large sized *cervids* and *bovids* – a problem which has been ailing Valmiki since long. The poaching onslaught of the 1990's and alteration in habitat during the BSFDC days has resulted in low prey biomass in Valmiki. As per the prescriptions of the working plans, the grassy blanks and mixed forests – favored by ungulates – were planted with commercially important species such as teak during the regime of State Forest Development Corporation. Today, just about 5% of the reserve's total area is under grassland cover. However, poor management of even these remnant grasslands – which reduces the palatability of grasses for wild ungulates – has further hurt the prospects of prey revival in Valmiki.

The anthropogenic pressure on the tiger reserve is huge. VTR is surrounded by about 150 villages within 4 km from its boundary, exerting immense biotic pressure on the reserve. There is no forest village inside the core area of the reserve, while there are two villages in buffer area. However, a ~45 sq. km. revenue land in a big flat 'Done valley' surrounded by Dun and Someshwar hill ranges lies in the central part of the reserve, which harbors 25 revenue villages (population approximately 20000) dominated by Tharu community, a scheduled tribe. These villages, located in the heart of the tiger reserve, are heavily dependent on the reserve for small timber, firewood and other minor forest produce like grasses, medicinal plants and other resources. Cattle from these villages directly compete with wild herbivores for

fodder. The only positive here is the fact that the grazing pressure is limited up to 2 kilometers inside the reserve.

It is important to mention here that the entire forest area of Valmiki is notified as a Protected Area (Sanctuary and National Park), except a small portion in easternmost side which is a Protected Forest. Hence, there is no other forest left out to meet the *bonafide* requirement of forest dependent villages. Forest fire is also a recurring problem in Valmiki as some villagers ignite fire to promote growth of fresh grass shoots for their cattle. Uncontrolled fire in the grasslands of Madanpur is of prime concern for such fire causes great damage to hog deer habitat. And so it is of prime importance to reduce the resource dependency of villagers on the tiger reserve, so that the biotic disturbances are kept minimal.

Infrastructure development in and around the reserve in the name of "development" has further fragmented the habitat. Commissioning of Bagaha-Chhitauni railway line in 1990s blocked the natural drainage of two perennial streams Rohua Nala and Kotrahiya Nala, and this led to the submergence of 1600 hectares of forest land, thus destroying a prime tiger habitat. Moreover, trains running on this killer track that traverses a distance of about 5 km in the tiger reserve have mowed down numerous small and large animals over the years. In 2006, a female rhinoceros, one of the 5 rhinos that lived in Valmiki at that time, succumbed to a train hit on this railway track.

Another serious issue Valmiki is faced with is

the loss of connectivity between the Madanpur forest range and rest of the reserve. This connectivity has been almost completely lost with the coming up of a road (state highway), number of canals, agriculture lands and other encroachments between Madanpur and the rest of the reserve. The only glimmer of hope for the wildlife of the ~100 sq. km Madanpur range is the fact that this range has a bleak connectivity with a forest range of Sohagi-Barwa Wildlife Sanctuary in Uttar Pradesh. In December 2011, a male tiger which was found wandering near Hajipur (about 15 kms from Patna, the state capital of Bihar), most likely strayed out from the Madanpur forests and travelled approximately 300 km along the Gandak river before reaching Hajipur. The Gandak river forms the western boundary of the forest range and joins the Ganga near Hajipur.

And as if all these problems weren't enough, disturbances due to biotic interferences and intense forestry operations have led to colonization of many unwanted and invasive floral species in Valmiki. Many parts of the reserve are infested by *Eupatorium* and *Mikania* occupying the open and moist patches. *Dwarf phoenix* show luxurious growth in fire affected hilly areas. These species suppress the growth of grasses and herbs crucial to sustaining a healthy herbivore population.

TURNING THE TIDE

After remaining neglected for many decades, things have started taking a turn for the better at Valmiki Tiger Reserve. The law and order



Dr. Samir K. Sinha

Valmiki Tiger Reserve supports a good population of the Critically endangered Gyps Vultures

situation has improved significantly which has created a positive environment for the reserve's managers, frontline staff and other stakeholders. A public interest litigation filed by Mr. Ashok Kumar, Vice Chairman, *Wildlife Trust of India (WTI)* in the Hon'ble Supreme Court in 2001 led to regularization of staff salary and post. The illegal boulder and pebble mining that was wreaking havoc on the Pandai river bed and its environs within the sanctuary land was discontinued from 2002 onwards in compliance of the orders of the Hon'ble Supreme Court. Earlier, this illegal mining in Pandai had isolated the moist mixed forests of about 40 sq. km. from the main forests of Valmiki. Now, with the miners gone, tigers have moved further east across the Pandai river and reclaimed this habitat. Moreover, the Pandai river bed has now taken a shape of big grassland frequented by ungulates and even large winter migratory birds like the Black Stork (*Ciconia nigra*).

Prior to 2004, usually the Field Director of Valmiki was also burdened with the charge of Conservator of Forests of adjoining forest circles, but today, Valmiki has a dedicated Field Director. The deployment of SSB in 2002



"The Last Tiger?": A young tiger walks across a dry nullah-bed in Valmiki Tiger Reserve. Inspite of an improved management, the future of Bihar's last tigers isn't secure just yet.

has greatly improved the protection of the reserve ; at the same time the infrastructure development and increased funding has made the front line staff confident and much more effective at protecting Valmiki. In 2003, Wildlife Trust of India (WTI) recognized the

great potential Valmiki Tiger Reserve withheld, and ever since then WTI has been supporting the tiger reserve management through scientific studies and prescriptions for improving habitat conditions. There was a time when even the existence of tigers in the reserve was suspected not only by laymen but by many conservationists as well. But, continuous scientific monitoring of tigers has proved their apprehensions wrong. A number of tigers including breeding tigresses with cubs have been photographed several times. Study of wild ungulate pellet density over the years suggests that there has been a significant increase in prey abundance from 2003 onwards. Apart from this, WTI is working in selected villages in and around Valmiki to develop a forest dependency

reduction model. Livelihood improvement, reduction in firewood consumption, plantations, and energy security are some of the initiatives initiated by WTI in the villages of Done Valley.

Another welcome development for Valmiki has been the fact that after decades of wait, the tiger reserve is finally getting some attention from the state government on compliance of statutory provisions and improvements in overall situation of the reserve. And nothing demonstrates this newfound political support for the reserve more than the recent visits to the reserve undertaken by the Chief Minister and Deputy Chief Minister (in-charge Forest Minister) to comprehend the ground realities of Valmiki. I hope this governmental support continues in future as well because without active political support, dreams of resurrecting Valmiki Tiger Reserve will remain just that – a dream!

However, the biggest challenge before the

reserve is recovery of prey species, for without a robust prey density, an increase in tiger and other predator density is impossible. This can be achieved through stringent protection, habitat improvement and addressing biotic pressures such as grazing and forest fires. At the same time, to conserve wilderness in a human dominated landscape, it is equally important to make the local communities a partner in all conservation initiatives. This necessitates the formulation of a workable co-existence plan for tiger conservation in Valmiki in partnership with local communities. Conservation and scientific management of VTR is important not only for the reserve, but for the persistence of wildlife in the entire *Chitwan-Parsa-Valmiki* landscape.

Valmiki is the last relic of the once abundant wildlife of Bihar and the tiger's last stand in the state; if we fail to save this unique wilderness, a part of Bihar's soul would be lost forever.

(The views expressed in this article are the author's own)



Dr. Samir Kumar Sinha: Based at Valmiki Tiger Reserve in Bihar Dr. Sinha has been implementing Wildlife Trust of India's tiger conservation project in the reserve since 2003. Prior to that, he was involved in the ecological and behavioral study of Gangetic River Dolphin. He is interested in the ecological monitoring and actions leading to sustainable use of natural resources. Dr. Sinha is also a member of the State Board for Wildlife, Bihar. He can be contacted on his email id : samir.wild@gmail.com

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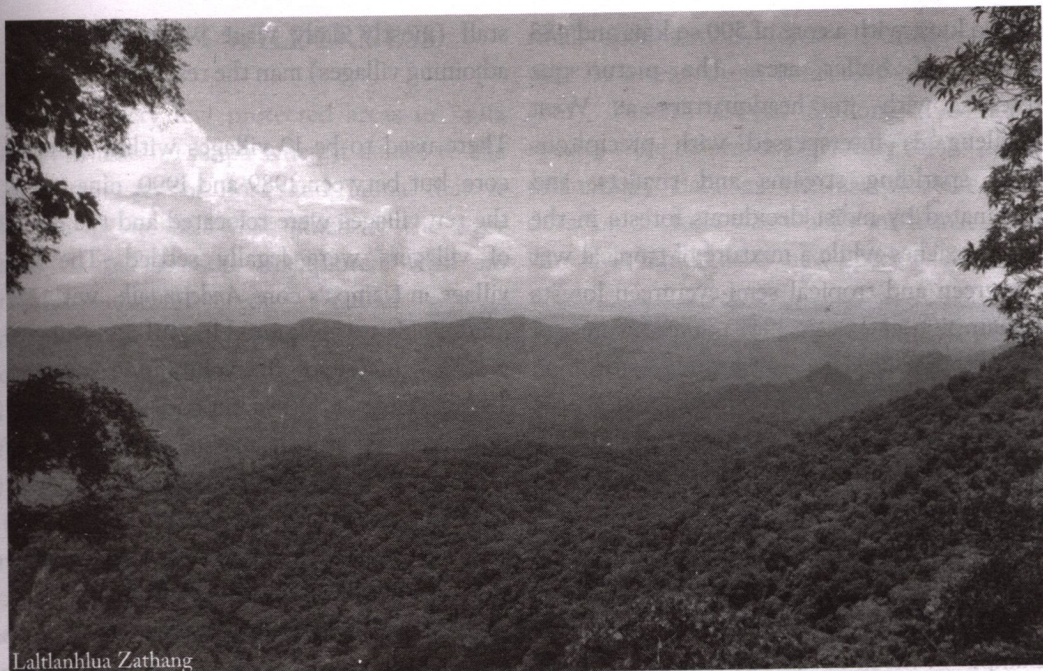
DAMPA : OUT OF WOODS?

By Laltlanhlua Zathans

DTR Camera Trap



Most Indians know that much of India's north-east is enveloped by a vast expanse of green that straddles across the "seven-sister states". And since for a layman the presence of forests automatically means it being inhabited by the iconic wildlife species of India's forests – the majestic tiger, the furtive leopard, the lordly elephant, the stately sambar and so on and so forth; so it comes as a rude shock to the few of them who care to visit the wildernesses of this geographical zone when they realize that their assumptions about these forests were pretty incorrect. And this is because save for a few Protected Areas (PA) in Assam (Kaziranga, et. al.), most of the seemingly unending ocean of green that cloaks India's north-east suffers from what conservationists and wildlife biologists term as "Empty Forest Syndrome", which means that most of the forests of this landscape have been emptied of large and most medium-sized mammals, primarily due to bushmeat hunting as well as commercial poaching. The fact that almost all the forests in this part of India – except for some grasslands forests of Assam – are mainly dense evergreen forests, accounts for a naturally low-density of wildlife (both prey and hence predators as well). So with an unchecked slaughter of wildlife it wasn't long before many of these forests were not only emptied of almost all its large and medium sized mammalian fauna, rather many forests went completely quiet because people didn't even spare the birds that used to dwell there. Today, the once abundant wildlife of this mystical landscape survives treacherously in a few protected areas, and even in these few PAs, its only two or three



Laltlanhlua Zathang

Above : Picturesque Dampa Tiger Reserve ; Facing Page : Keite or Leopards are frequently camera-trapped in Dampa Tiger Reserve

flagship species that tenaciously hold on against seemingly insurmountable odds. Save for Assam, in rest of the 6 states, we now have just three PAs that still serve as a microcosm of the incredible mammalian biodiversity that once thrived in the huge biodiversity-hotspot of the Indo-Myanmar belt. One of these is Pakke Tiger Reserve in Arunachal Pradesh which is doing quite well, the other is Arunachal's Nandapha Tiger Reserve which isn't doing really well at the moment, and then finally the third is the least known among them all – Mizoram's Dampa Tiger Reserve. Even though this little-known tiger reserve has been consistently written off by almost all conservationists, I for one know that all of them are gravely mistaken. Dampa's situation maybe grim, but the reserve is far from being a lost cause. Infact, I'm surprised how people dismiss Dampa so easily even though much of

the reserve area has never been documented for wildlife, and with the ongoing camera-trapping exercise according to the new NTCA guidelines, these unexplored pristine forests are revealing fascinating new secrets that are sure to surprise the conservation community.

THE FRONTIER TIGER RESERVE

Located in western Mizoram's Mamit district, Dampa lies at the tri-junction of Bangladesh and two Indian states viz. Mizoram and Tripura. Dampa Tiger Reserve is the largest PA in the state of Mizoram (occupying 4.68% of Mizoram's geographical area). One of India's remotest tiger reserve, it falls between 23° 32' 42" to 23° 41' 36" N latitude and 92° 13' 12" to 92° 27' 24" E longitude, and under Zone-9B of the bio-geographic classification of India. The tiger reserve is spread over an area of

988 sq.kms, with a core of 500 sq.kms and 488 sq.kms. of buffer area. The picturesque reserve, with its headquarters at West Phaileng, is interspersed with precipitous hills, sparkling streams and rivulets, and dominated by moist deciduous forests in the lower reaches while a mixture of tropical wet evergreen and tropical semi-evergreen forests (Champion and Seth, 1968) drape the rest of the reserve. The altitudinal variation ranges from 40m to 1021m, and the tiger reserve experiences high precipitation with an annual rainfall of approximately 200 to 250 cm. With such diversity of habitat, its easy to comprehend why Dampa supports such an astonishing diversity of flora & fauna.

Dampa was first declared as a wildlife sanctuary in 1976, but almost immediately that original notification was challenged in the Court and the Court annulled the notification. However, the government of Mizoram displayed resolute commitment towards preserving Dampa, and the area was again declared as a wildlife sanctuary in 1985 and finally notified as one in 1989. Within a few years, the Project Tiger Directorate at Delhi realized the importance of conserving Dampa's unique habitat and wildlife, and so even though tiger density in this forest wasn't high, Dampa was brought under the Project Tiger scheme in late 1994.

Since its very inception, Dampa has had just two ranges – the *Teirai* range covers the northern part of the reserve while the southern portion of the reserve falls under the *Phuldungsei* range. The reserve has just 13 regular forest department personnel including the Field Director, while about 180 temporary

staff (mostly daily wage workers from the adjoining villages) man the reserve.

There used to be 10 villages within Dampa's core, but between 1989 and 1990, nine out of the ten villages were relocated and the rights of villagers were legally settled. The last village in Dampa's core, *Andermanik*, with 227 households was relocated in 2011 according to NTCA's guidelines for voluntary relocation. Today, Dampa's 500 sq.km core is completely inviolate, and this is one of the park's key strengths offering great potential for long term conservation of its wildlife. There are 18 villages (each with separate village council) within the buffer area and 3 villages (*Tuirum*, *Pukzing* and *Hnahva*) lie immediately next to the buffer.

THE PEOPLE

The people living around Dampa's green environs form a lovely conglomeration of various ethnic tribes, sub-tribes and migrants who have made this land their home. Most of the people here are *Mizos*, but they belong to different sub-tribes within the larger Mizo community. Here live the *Chakma*, the *Bru* (*Reang*), migrant *Burmese*, *Assamese*, *Santhalis* and many more; all of them embracing different religious beliefs as well, be it Christianity or Buddhism or Hinduism or traditional tribal religions. And just like our country, this motley group of people too is bound by the principles of unity in diversity with people from all cultural backgrounds living and working in peace and harmony. This diversity of people is reflected in Dampa's workforce too which mostly comes from these very adjoining villages.

THE LAST WILDERNESS

There are very few protected areas in India that can match Dampa when it comes to the sheer diversity of flora and fauna that it harbours. The fact that much of the tiger reserve area is still unexplored with no reliable floral or faunal documentation ever having been done here, is perhaps a testimony to both the primeval nature of the forests and – ironically – the historical neglect of Dampa as well. There are no comprehensive mammalian or floral species checklists for the reserve while only a couple of baseline datasheets are available on the amazing birdlife of this protected area. T.R. Shankar Raman (Raman, Johnsingh et. al., 1998) documented 138 birds in 1994 over a short period of time while working on his M.Sc. dissertation.

Later, Raman et. al. (1998, 2001) recorded 237 bird species in the reserve. To the surprise of ornithologists, even birds like Lesser Whistling Teal and Black Stork have been camera-trapped in Dampa even though this area wasn't thought to be a part of their geographical range. And so it hardly came as a surprise to us when Birand and Pawar (2001) listed Dampa as an Important Bird Area (IBA).

As far as Dampa's floral diversity it concerned, the reserve is mainly covered by tree forest in the hills and bamboo (mostly *Melocanna baccifera*) in the low lying areas. The various forest types in Dampa consist of closed and open evergreen forest, closed and open moist deciduous forest, bamboo forest and very

small open scrubby forests. During a short visit by a team from *Botanical Survey of India* (BSI), Eastern Circle, Shillong, 190 floral species were recorded. Obviously this is just a preliminary data as the sample size and duration of study was wholly inadequate. I'm sure that hundreds of new species would be



DTR Camera Trap

A Black Stork camera-trapped in Dampa

added to this list post a detailed floral survey of Dampa. In 2011, noted taxonomist Mr. Haridasan paid a 3 day visit to the reserve for surveying its flora, the results of his survey are still awaited.

Some of the major tree species of the area, as recorded by Hmingthangpui, Suchitra Devi and colleagues (2011) are *Mesua ferrea*, *Dipterocarpus turbinatus*, *Artrocarpus chalpasa*, *Terminalia myriocarpa*, *Michelia doltsopa*, *Adina cordifolia*, *Syzygium cuminii*, *Bischofia javanica*, *Eleoarpus aristatus*, *Vitex glabra*, *Mangifera sylvatica*, *Garcinia cowa* and *Leca indica*. They also found out that there has been a substantial change in vegetation cover of Dampa over the last 30 years. As much as 37.52% of closed



DTR Camera Trap

The elusive Clouded Leopard or *Kelrat* as it is known is Mizo, is one of 6 felids that have been confirmed in Dampa. The author believes that 2 other small-cats viz. Fishing Cat & Jungle Cat also inhabit Dampa, but they are yet to be camera-trapped.

evergreen/semi evergreen forest and 7.92% of closed moist deciduous forest was lost between 1978 and 2005, while the open evergreen/semi evergreen and open moist deciduous forests increased by 24.61% and 32.49% respectively during this period. The authors concluded that it was shifting cultivation that is so prevalent around Dampa – just as it is throughout north-east India – which was responsible for this alteration of vegetation cover.

I've known Dampa for many years now, first as a forest officer belonging to the Mizoram cadre and now as the tiger reserve's Field Director. And even after all these years, I still can't get my head around the unbelievable mammalian biodiversity of this incredible forest. Every time I think that I know all about Dampa's wildlife, mother nature humbly proves me wrong by throwing up one surprise after the other.

As I said before, there is no consolidated checklist of the mammalian fauna of Dampa, but the deployment of a handful of camera-traps since the end of 2006 has given us a glimpse of the fascinating mammalian diversity of Dampa. It has also provided us with preliminary data on the list of mammals that dwell here. We have already managed to photograph a number of Dampa's elusive mammals, and I know that there are many more yet to be discovered here.

Dampa's pride is the phenomenal diversity of cat and primate species that inhabit this tiger reserve. 6 members of the cat family viz. the tiger, the leopard, the clouded leopard, the marbled cat, the Asiatic golden cat, the leopard cat have been confirmed here, out of which all except the tiger have been camera-trapped. I believe two other cat species i.e. the jungle cat and fishing cat reside here too, but they haven't been camera-trapped yet. Clouded leopards

and golden cats are camera-trapped frequently, thus indicating that they are doing well in Dampa. Marbled cat was first camera trapped in 2006, and back then it might well have been among the first images of this elusive cat from India. They have been camera-trapped a few times since then.

Wild dogs or *Dholes* are the top canid predators of Dampa who will take down anything ranging from a sambar to a barking deer and everything in between. I was quite surprised by the healthy population of wild dogs in Dampa. Large packs with pups and even wild dogs on kills have been camera trapped. And this to me is a very significant discovery because such a healthy population of wild dogs suggests that maybe the prey density in Dampa isn't as bad as was thought to be because a healthy Dhole population is one of the primary indicators of good prey density. *Jackals* are mainly found in

DTR Camera Trap



One of world's least known wild cat, the Marbled Cat or *Pavak*, was first camera-trapped in Dampa in 2006

the fringe areas of the reserve close to the villages.

Out of the 15 primate species in India, 8 are found in Dampa viz. *hoolock gibbon*, *rhesus macaque*, *Assamese macaque*, *pig-tailed macaque*, *stump-tailed macaque*, *Phayre's leaf monkey* (or *spectacled monkey*), *capped langur* and *slow loris*. Out of these, in India, the *Phayre's leaf monkey* is endemic to Mizoram, Tripura and a couple of surrounding districts in Assam.



DTR Camera Trap

The rare Asiatic Golden Cat or *Keisen* dwells in the dense forests of Dampa Tiger Reserve

Dampa exhibits a wide variety among the ungulate species too. *Indian bison* or *gaur*, the largest wild cattle can be found here while *sambar*, *serow*, *barking deer* and *wild boar* form the primary prey of tigers and leopards. The little known *Malayan sun bear* and the *Asiatic black bear* reside in these dense forests as well. The *Malayan sun bear* is perhaps the least known bear species in India and the world as well. Few decades ago, wildlife scientists had expressed fears that the

species might have been expatriated from India. But this rare animal was first camera-trapped by us in late 2006 and is being frequently photographed ever since. The images taken in 2006 were not only among the first images of a wild sun bear from India, but they also provided concrete evidence of the species' continued existence in India. I personally believe that Dampa perhaps harbors one of the best populations of the Malayan sun bear in India.



DTR Camera Trap

The little-known Malayan Sun Bear or *Samang/Mangte* in Mizo was first photographed in Dampa in 2006

Himalayan crestless porcupine, brush-tailed porcupine, Malayan giant squirrel and red flying squirrel.

And then there are a host of lesser-carnivores and lesser mammals that add to the biodiversity of Dampa. They are Chinese ferret badger, hog badger, small-clawed otter, yellow-throated marten, large Indian civet, small Indian civet, Himalayan palm civet, spotted linsang, binturong, crab-eating mongoose, Chinese pangolin,

Dampa once used to harbor a good population of Indian elephants too, but then the population mysteriously started declining in the 1970's, and today the reserve just has a single elephant left.



DTR Camera Trap

The Asiatic Black Bear or *Savawm* cohabits Dampa with his smaller Malayan cousin

OF ELUSIVE TIGERS AND VANISHING ELEPHANTS

As usually is the case with lesser-known and neglected tiger reserves of India, conservationists have regularly questioned even the presence of tigers in Dampa, and a number of them have argued that there are actually no tigers in Dampa, that tigers went extinct from Dampa long back. Naturally, Dampa's image took a great hit due to such irresponsible statements issued by conservationists without any verification of facts and without any of them having the faintest idea of ground realities here.

The problem with Dampa is that the wildlife census methods normally used in bulk of India's PAs don't work in a habitat like Dampa. And so it's extremely difficult to ascertain the wildlife numbers here, and the tiger or leopard are no different. Hence, no reliable census figures have been generated in

Dampa, and the historical neglect and staff-crunch that Dampa has always been faced with hasn't helped much either. Recently, to put the apprehensions regarding tiger presence in Dampa to rest, and to gather preliminary data on the status of the big cats here, the Mizoram Forest Department, WWF and Aaranyak joined hands to conduct a DNA analysis of scat samples collected from a sample area within the park.

The survey began in March 2012, and the Aaranyak-WWF team led by Dr. Udayan Bothakur, Head of Aaranyak's Wildlife Genetic Programme managed to collect as many as 24 carnivore scat samples from the sampled area in just 3 days! After such unexpected success at collecting scat samples, Dr. Borthakur remarked how he had grossly under-estimated Dampa. Along with our team's previous collection, 27 scats were finally sent for analysis to Aaranyak's Lab, and



DTR Camera Trap

Sambars constitute the chief prey of Dampa's Tigers, Leopards and Wild Dogs

out of these 9 were found to be of tiger origin. Despite the low quality of the collected samples, Dr. Borthakur and his team put in a determined effort to obtain the relevant data from the samples and finally after a roughly 3 month long wait, we had the results in front of us. Dr. Borthakur informed us that they had

managed to trace 3 different DNA's from the 9 tiger scat samples, and hence confirmed the presence of 3 individual tigers. The result was a huge morale booster for me and Dampa's entire team that had worked so hard over the years to protect this jewel in Mizoram's crown. What was more elating was the fact that these figures were for a small

sampled area which was just a fraction of the total park area, and moreover the survey in this small sample area had been conducted over a very short period of 3 days. And even though we haven't managed to camera-trap a tiger in the past 5 years – the fact that we have very few traps and trained individuals being critical factors in our failure in getting an image – now with these encouraging results we have redoubled our efforts towards capturing one. I am sure that it's now just a matter of time before we get one in on our camera-traps. How am I so sure of this? Well, its because of this touching remark that one of our daily-wage workers made – “*I would forego my life Sir, should the tiger demand it in exchange of a photograph of his*”. With such dedicated, hardworking and honest people in our workforce, I am confident that



Laitianhlua Zathang

“I would forego my life Sir, should the tiger demand it in exchange of a photograph of his”

Dampa's Unsung Heroes : Daily wage staffers Samuel (left) and A.K. Johnson (right) during the tiger survey.

no goal is insurmountable for us and we will succeed in getting Dampa's first tiger image very soon.

The WWF and Aaranyak team will be back in Dampa in the upcoming winters (which is the dry season here) for a much more intensive scat-collection and camera-trapping drive. But when will the winters begin is a tricky question because the weather here at Dampa is very unpredictable and sometimes it rains well into the first few weeks of what should have been dry winter months. Nonetheless, whenever the survey starts, we hope to cover a much larger area during that exercise. I'm sure that many fascinating new secrets will be uncovered during this upcoming survey. I and our entire team eagerly await the winters.

DTR Camera Trap



The author was surprised to find a healthy population of Wild Dogs or *Chinghnia* in Dampa, thus suggesting that the park's prey base might be better off than what it was thought to be.

Its perhaps worth mentioning here a wonderful wildlife moment that I had here in Dampa during the scat-collection survey. On 7th March, I, Dr. Jimmy Borah (WWF) and Dr. Borthakur (Aaranyak) were fishing for our dinner near our temporary camp. Suddenly, out of nowhere appeared a barking deer nervously crossing the river few metres away from where we were sitting. Observing the jittery deer, I immediately suspected that it was being stalked by some predator, my hunch on it being wild dogs or maybe even a leopard. And I was right, within a few minutes a pair of wild dogs came out from the same spot upstream, but they sensed our foreign smell and immediately turned back. As the sun had already gone down, and it was about to go dark, we could not photograph this event. I and Dr. Borthakur were absolutely stunned and delighted at the same time at the entire turn of events, for it is extremely rare to witness something like this in Dampa where direct wildlife sightings are incredibly rare.

Jimmy barely managed to hold back his joyous screams. I have been lucky enough to have had a few other memorable direct sightings of sambars and wild dogs, while one of our staffers, Zakhuma once managed to photograph a leopard cat stalking a Khaleej Pheasant.

A very curious case that has always baffled me is that of Dampa's elephants. It is said that Dampa once was home to a number of elephants, but over the last 3 decades they slowly started disappearing. By late 1980's the population was down to >10 individuals, by 1997-98 it was down to 5 and by 1999-2000 it had whittled down to just 4 individuals. (Choudhury 2007). In 2004, I was informed the there still were just those 4 elephants in the park, they had either not bred or if they had then the calf hadn't survived. Then in 2005, one of the elephants was found dead with bullet holes in its body, and it was concluded that he was killed in retaliatory fire

by locals fed up of crop-raiding by these elephants. Then within a few months, another member of this group was killed just outside Dampa tiger reserve by suspected militants. It was said that this elephant had blocked the only road in that area and when the locals saw no other option to drive him away, he was shot by a suspected militant.

Over the next couple of years, the rest of the two elephants mysteriously disappeared as well, and the local extinction of elephants from Dampa was complete. It was perhaps ironical that while everybody was debating the presence of tigers in Dampa, it was the elephants that actually went extinct from the reserve. But then a couple of years ago, a juvenile elephant turned up in Dampa out of nowhere. Nobody knew how did he come here, and where did he come from. This lone juvenile has settled here now, and he is Dampa's last elephant! However, his sudden appearance here suggests that perhaps a corridor for elephant movement still exists, and further studies need to ascertain the tentative



The incredible day-time image of a Leopard Cat stalking a Khaleej Pheasant was taken by Zakhuma, one of Dampa's best trackers.

path that this elephant might have undertook to reach Dampa. It's possible that he came here from Rangamati district (*Chhittagong hills*) in Bangladesh, which has a few elephant pockets. And if we can provide adequate protection to these corridors, I hope that elephants would come back to Dampa and make these forests their home once again.



The lone Elephant of Dampa Tiger Reserve

DAMPA'S HIDDEN JEWELS

The breathtaking photographs of Dampa's incredible wildlife, accomodated along with the text, must have delighted the readers. But Dampa is far from finished just yet, and so here are some more spectacular photographs providing a glimpse of the unbelievable diversity of rare wildlife that Dampa harbours.



An Asiatic Black Bear (*Ursus thibetanus*) or *Savawm* as it is called in Mizo



A *Chingnia* or Wild Dog (*Cuon alpinus*) on a Wild Boar (*Sus scrofa*) kill



A Clouded Leopard (*Neofelis nebulosa*) or the *Kelral*



A Marbled Cat (*Pardofelis marmorata*) or the *Pavak* (sometimes also referred to as *Pawi*)

DAMPA'S HIDDEN JEWELS



A Leopard Cat (*Prionailurus bengalensis*) or
Sanghar



A *Hauhuk* or the Western Hoolock Gibbon
(*Hoolock hoolock*); photographed by Zakhum

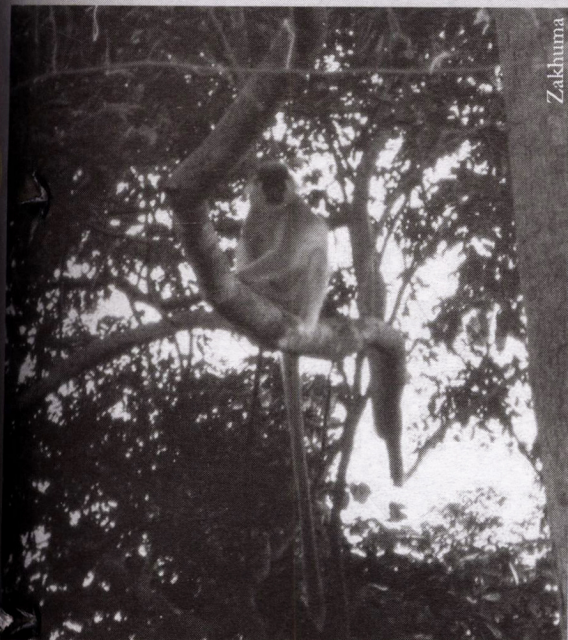


A Phayre's Leaf Monkey (*Trachypithecus phayrei*)
or the *Dawr*; photographed by Thangliana, a
daily wage tracker at Dampa



A Pig-tailed Macaque (*Macaca leonina*) or the
Zawngrengte

DAMPA'S HIDDEN JEWELS



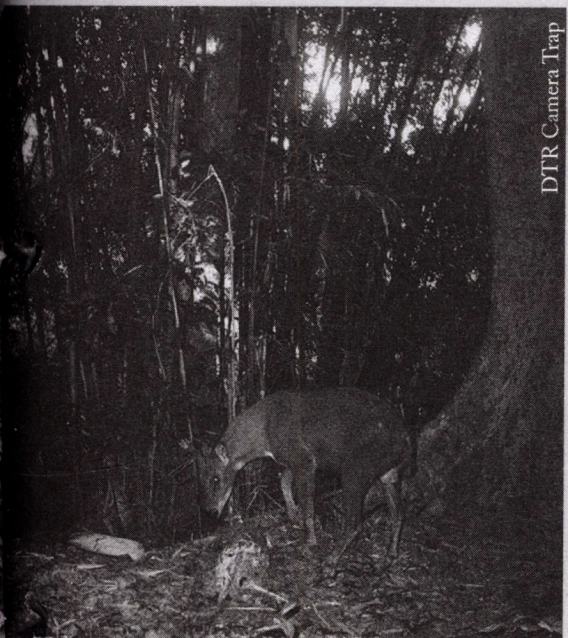
Zakhuma

A Capped Langur (*Trachypithecus pileatus*) or Ngau ; photographed by Zakhuma



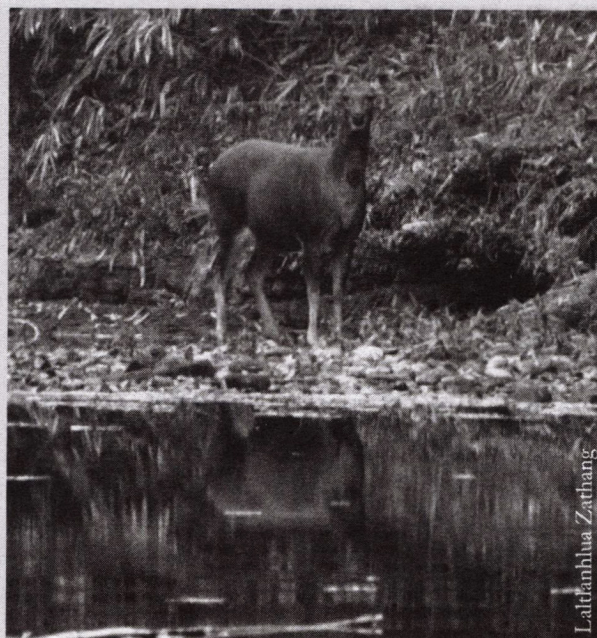
DTR Camera Trap

A Sele/Ramsial or Gaur
(*Bos gaurus*)



DTR Camera Trap

A Red Serow (*Capricornis rubidus*) or Saza



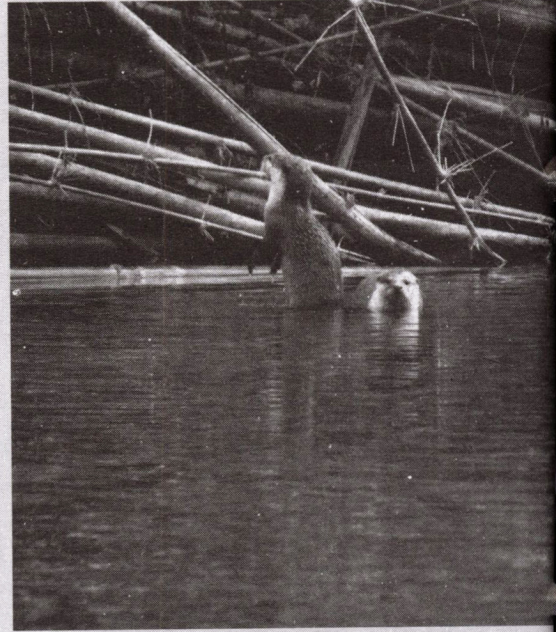
Laitianbhua Zathang

A rare hand-held image of a Sambar (*Cervus unicolor*) or Sazuk by the author

DAMPA'S HIDDEN JEWELS



A female Barking Deer (*Muntiacus muntjak*) or *Sakhi* with its fawn



A pair of *Hramte* or Small-clawed Otter (*Amblonyx cinereus*); image taken by Thangli



The rare Bear-cat or Binturong (*Arctictis binturong*), also known as *Zamphu* in Mizo



A Yellow-throated Marten (*Martes flavigula*)
Safia /Safetumbungrang

DAMPA'S HIDDEN JEWELS



DTR Camera Trap

A Hog-Badger (*Arctonts collaris*) or *Phivawk*



DTR Camera Trap

A *Sahmaitha* or the little known Small-toothed or Chinese Ferret Badger (*Melogale moschata*)



DTR Camera Trap

A Crab-eating Mongoose (*Herpestes urva*) – one of the world's least known mongoose species



DTR Camera Trap

The Asiatic Brush-tailed Porcupine (*Atherurus macrourus*) or *Kuhsi*

DAMPA'S HIDDEN JEWELS



A Himalayan Crestless Porcupine
(*Hystrix hodgsoni*) or Sakuh



A Tlumpui or the Large Indian Civet
(*Viverra zibetha*)



A Himalayan Palm Civet (*Paguma larvata*) or
Sazaw/Zawbuang ; photographed by Zakhuma



A Sazaw/Zawhang or the Common Palm Civet
(*Paradoxurus hermaphroditus*)

DAMPA'S HIDDEN JEWELS

COVER STORY I



DTR Camera Trap

A Small Indian Civet (*Viverricula indica*) or
Tlumtherh



Thangliana

A Malayan Giant Squirrel (*Ratufa bicolor*) or
Awr-rang ; photographed by Thangliana



DTR Camera Trap

A male Khaleej Pheasant
(*Lophura leucomelanos*)



DTR Camera Trap

Lesser Whistling Teals
(*Dendrocygna javanica*)

DAMPA: SAVING A PARADISE IN PERIL

Dampa is beset with a number of conservation issues. Let's start with the management problems first. The park is lashed by heavy rains for almost 6 months a year (sometimes even more), and this inherent ecological trait not only makes the management of park a very arduous task, it also severely restricts the movement of park staff through the reserve for half of the year. And then there is the peculiar problem of the appalling inadequacy of regular forest staff and acute lack of park infrastructure. There are just 13 regular forest staffers – A Field Director, 2 Range Officers, 5 Foresters, 3 Forest Guards, 1 Driver and 1 Lower Division Clerk. There are no posts for Deputy Directors or Assistant Directors. The rest of the park's workforce is temporary and consists of 2 Foresters and 5 Forest Guards working on contract basis, 6 muster roll staff and 170 daily wage workers supported by NTCA. With poor infrastructure and more than 90% of the total workforce being temporary, and an overwhelming majority being untrained daily wage staff, it is extremely difficult to implement protection mechanisms and modern scientific wildlife monitoring methods in the field. Moreover, given the remote locality of Dampa and its poor connectivity with the urban areas of the state, even the dozen regular forest personnel try and avoid getting posted here. A posting to Dampa is nothing short of a punishment posting for most of them. Because of these very reasons, no wildlife biologist is willing to work in this bio-diverse paradise either. Another managerial issue Dampa tiger reserve grapples with is the lack of unified control

over the reserve. Only the 500 sq.km. core area of the tiger reserve is under the direct jurisdiction of the Field Director, while he has no administrative control over the 488 sq. km. buffer.

One of the biggest problems Dampa, and infact most forested landscapes of north-east India face is the practice of *jhum* or slash-and-burn or shifting cultivation. In this method of cultivation, a forest patch is cut down, the land is left to dry and the remaining vegetation is burned. This cleared land is then cultivated for a couple of years until the soil nutrients start depleting. Once the soil nutrient levels become too low for further cultivation, this patch of land is abandoned and a new forest patch is again cleared for *jhum*. During this period, new secondary vegetation grows on the original cleared patch that had been rendered fallow once people moved on to new cleared lands. After a few years (about 10-12 years here around Dampa), the original land can be re-cultivated, and the cycle keeps on repeating itself. T.R. Shankar Raman and AJT Johnsingh, scientists from WII worked on identifying the conservation implications of *jhum* cultivation in Mizoram in the late 1990's, their research site being Dampa tiger reserve.

Their research concluded that shifting cultivation had had a drastic impact on plants and birds in Dampa's buffer where the villages still practice shifting cultivation. I will quote Mr. Suhel Quader's review of Shankar Raman et. al.'s paper in *Pitta* (2001), wherein he writes : (In Dampa) "they (researchers) found areas that had been left fallow after cultivation 1, 5, 10, 25, and c.100 years ago, as well as areas of

undisturbed (primary) forest (they estimated forest age by looking at Forest Department records and interviewing village elders). In each of these areas, they measured and described both the vegetation and bird communities. They found that shifting cultivation has a drastic impact on plants and birds. Compared with primary forest, 1-yr fallows had 1/10th the number of tree and shrub species, and 1/5th the number of bird species (excluding open-country birds). Bamboo was the main vegetation in recent fallows, but by 25 yr, saplings of forest trees and shrubs were found growing under the bamboo. Bamboo declined rapidly in older fallows, and was completely absent from primary forest. Birds that suffered the most from this change in habitat were rare or restricted-range species like the Red-headed Trogon and the White-cheeked Partridge. Some species actually benefited, but these tended to be common and widespread species like the Red-vented Bulbul and Common Tailorbird."

The paper itself said "A significant finding is that the abundances of a number of Himalayan forest bird species, including three considered endangered within India, were negatively related to degree of habitat alteration due to jhum." The authors also observed that with increasing population and decreasing land for cultivation, there was a serious threat of conflict between the locals and the park management in the future years. They write "With decreasing land for jhum and increasing demographic pressures, conflicts with park management have arisen as village communities periodically demand that they be allowed to cultivate land within the protected area (personal observations)." As discussed previously, Hmingthangpui, Suchitra Devi et. al had concluded shifting cultivation to be the reason behind forest cover changes in Dampa as well. And even though there is no shifting

cultivation done within Dampa's core area thanks to it being inviolate, indirect detrimental effects of shifting cultivation are felt in some areas of the core.

However, the situation in Dampa's buffer is still salvageable because even though there are areas where adverse effects of jhum have affected the forest quality, the majority of forest area under buffer zone is as good as the core, and some of these excellent habitats even lie near the various buffer villages. Alternate land use methods and livelihood methods are needed to successfully manage the challenges posed by jhum cultivation, and this can only be achieved when the various state departments, the forest department and the local people join hands and cooperate with each other.

Now let's talk about the one of the most severe threats to wildlife in Dampa, and again to the wildlife in north-east India in general - hunting. Hunting of wild animals is a way of life for the tribals of my land, a tradition they have been observing for thousands of years and that is still passionately followed by all male members of the community, be they young or old. Both guns (which includes licensed guns borrowed from urban areas as well as country made guns) and snares/leg traps are employed by the locals to hunt wildlife. Hunting is primarily for meat, but at the same time the trophies of their exploits holds great symbolic value as a proof of their masculinity and valor. Another reason for such prevalence of hunting culture here is the fact that our tribals mostly live in the hills, they live a hard life here and hence require a lot of energy, but they can't afford buying protein rich-food and hence

wild-meat is the easiest and cheapest option to meet their protein needs.

Resolving the hunting problem is a very difficult and complex affair, given how entrenched this tradition is in local people's mind. For starters though, I believe the problem can be minimized by supporting villages in rearing livestock through various eco-development plan, so that the dependency of villagers on wild meat to meet their protein needs is reduced and eventually eliminated altogether. Once this factor is eliminated, a carrot and stick policy will have to be followed against offenders wherein some repeated offenders will have to be taken to task legally while the community will have to be offered incentives to protect wildlife as a part of their heritage. This is where responsible, community-based low-impact tourism can be a great asset. Unfortunately, with the bad press Dampa has received over the years, and given its remote location, this goal can only be achieved if the wider conservation community publicizes Dampa's potential for interested wildlifers. A shining example of one such successful effort is the tourism practiced in Eaglenest Wildlife Sanctuary in Arunachal Pradesh. Such a tourism model can work here in Dampa too with a few site-specific modifications.

For our part in making things better for both



Even though tribal hunters will take down almost any wild animal that they come across, wild ungulates, such as this Wild Boar or *Sanghal*, are among the primary targets of hunters. A depletion of prey naturally results in depletion of predator density.

people and wildlife at Dampa, beginning from this year, we have started capacity building of various EDCs which I can frequently visit with two primary objectives. The first is to equip villagers through various eco-development projects to sustainably produce enough meat in each village so that it meets their daily protein needs. The second objective is to employ those solely dependent on jhum cultivation in these alternate livelihoods (such as rearing of poultry) and other eco-development initiatives on a priority basis so that their dependence on both jhum cultivation and wild bush-meat can be done away with.

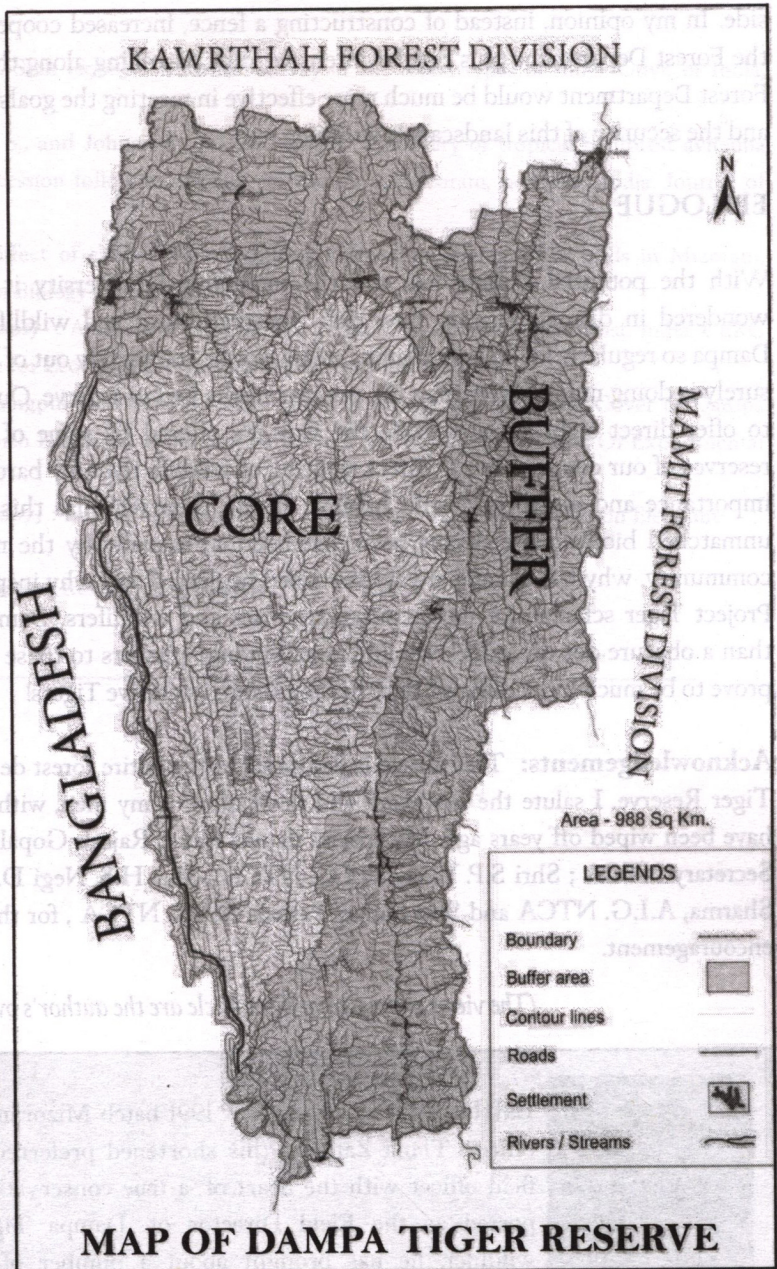
However, the most immediate threat to Dampa is the Ministry of Home Affairs' Indo - Bangladesh Border (IBB) fencing project which if constructed with slice through a 62km stretch of Dampa Tiger Reserve, and lead to a

loss of 15.20 sq.km of primary forest. Since this project was a clash between national and ecological security, the Central Empowered Committee (CEC) of the Honorable Supreme Court allowed the project to go ahead but only after it received the mandatory clearance from the Standing Committee of National Board for Wildlife (NBWL). Thankfully, the Mizoram Forest Department and the Mizoram State Board of Wildlife has registered its objections to the project after the NBWL asked for our views before considering the proposal for clearance.

In my personal opinion, while it is true that manning and protecting this porous international border (western Dampa shares the border with Bangladesh for a 62 km long stretch which falls within the core area)

against illegal movement of people is difficult, but construction of such a fence would severely restrict the movement of wildlife to and from the contiguous forests on the other side of the border. The other side beyond

Dampa in Bangladesh is dotted with 5 villages and even though the forest there is relatively degraded, we know that there is regular movement of wildlife between the Dampa and the contiguous forests on the Bangladesh



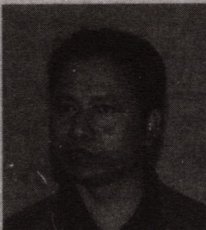
side. In my opinion, instead of constructing a fence, increased cooperation between BSF and the Forest Department plus regular intensive joint patrolling along the border by BSF and the Forest Department would be much more effective in meeting the goals of both national security and the security of this landscape's wildlife.

EPILOGUE

With the potential Dampa has and the incredible biodiversity it harbors, I have always wondered in dismay, exactly how did conservationists and wildlifers manage to write-off Dampa so regularly for so long. Dampa might not be completely out of the woods just yet, but it surely is doing much better than the popular media had us believe. Our forests may not be able to offer direct sighting of wildlife the way it's offered by some of the other popular tiger reserves of our country, but is direct sighting of wildlife the only barometer for measuring the importance and worth of a wild habitat? If not, then why has this tiger reserve with such unmatched biodiversity always been dismissed so casually by the mainstream conservation community, why has Dampa always remained neglected and why inspite of 18 years under the Project Tiger scheme, for most conservationists and wildlifers, Dampa is still nothing more than a obscure dot on India's wildlife map. Finding answers to these questions may very well prove to be much more difficult than finding Dampa's elusive Tigers!

Acknowledgements: This article is dedicated to the entire forest department staff of Dampa Tiger Reserve. I salute the hardwork and dedication of my men, without them Dampa would have been wiped off years ago. My special thanks to Dr. Rajesh Gopal, Addl. D.G. & Member Secretary NTCA ; Shri S.P. Yadav, D.I.G. NTCA ; Shri H.S. Negi D.I.G. NTCA ; Shri Rajiv Sharma, A.I.G. NTCA and Shri Sanjay Pathak, A.I.G. NTCA , for their constant support and encouragement.

(The views expressed in this article are the author's own)



Laltlanhlua Zathang : A 1991 batch Mizoram State Forest Service officer, Tlana Zathang (his shortened preferred name) is a dynamic field officer with the heart of a true conservationist. He is currently posted as the Field Director of Dampa Tiger Reserve. A keen wildlifer, he has brought about a number of positive changes in Dampa's management. One of the highlights of his tenure has been organising the first ever tiger scat collection drive in Dampa to ascertain the status of big cats in the reserve. Always keen to share his wildlife knowledge with laymen, he actively participates in making ordinary Mizos aware of their rich natural heritage, and hence eliciting their support for its conservation. He is married with two daughters and two sons, and lives in Aizwal. He can be contacted on his email id : tlana_z@yahoo.com

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UMRED-KARHANDLA WILDLIFE SANCTUARY

WILD MAHARASHTRA'S BEST KEPT SECRET

By Roheet Karoo

They said the obscure forests of Umred had tiger, leopards, wild dogs, gaurs and much more, but I was rather skeptical. How on earth could such a small, little-known forest in north-eastern Maharashtra, which is not even a Protected Area (PA) harbor such sundry wildlife, and that too in good numbers as the villagers claimed. I thought – " *These people must be mistaken, they can't be right* ". This was 2007, when the first anecdotal reports on Umred's wildlife started trickling in. I was pretty skeptical of these first reports that came my way mostly as word-of-mouth from villagers living in and around this ~200 sq.km. forest that fell under the



I knew that we had stumbled upon a little wild-jewel that few outsiders had any knowledge of. And I had my task cut out too, this forest needed to be notified as a Wildlife Sanctuary, and people in the right places needed to be made aware of the conservation value of Umred's forests to safeguard its wild denizens for posterity. Four years down the line, we finally succeeded in getting Umred's forests notified as a Wildlife Sanctuary on 6th June, 2012. However, the struggle for safeguarding these forests and its

Location of Umred-Karhandla Wildlife Sanctuary (UKWS)
Facing Page : "Chaitram", the biggest male of Umred-Karhandla

denizens continues to this day. Bhandara and Nagpur Forest Divisions. But the fact that so many locals were narrating the same story with such conviction finally convinced me to go and explore the forests of Umred in April 2008. Once I and a few friends from our organization, the *Wildlife Conservation and Development Centre (WLCDC)*, began exploring these forests, my skepticisms were proven wrong, and how! The villagers had been absolutely right all along, we immediately started encountering signs of a thriving wildlife – herds of cheetals, nilgai and even gaurs were ambling about; signs of tiger, leopard, sloth bear and wild dog presence were strewn all around in the form of pugmarks and scats. And right then and there,

VIDARBHA : MAHARASHTRA'S TIGER BASTION

The Vidarbha region stretching from 19° N to 21° N latitude, and 76° to 80°30' E. covers almost the entire eastern Maharashtra. With a huge area of 93654 sq. kms, comprising eleven districts, the geographical and climatic features divide this region broadly into two main zones viz. *Western Vidarbha* and *Eastern Vidarbha*. And even though this area is thought to be water-scarce, Vidarbha is drained by three major rivers, the *Purna* (tributary of

Tapi), the Wardha and the Wainganga (tributaries of Godavari). It's the river Wardha that divides Vidarbha into the two aforementioned zones. Western Vidarbha is hemmed between the Gawilgarh and Ajanta hill ranges, and save for the low lying Purna valley, it consists of high plains and hills (Melghat, an offshoot of the Satpura Range, being one of the most prominent among them). Eastern Vidarbha, is a 'hummocky' landscape with low and irregular hills and sluggish streams being the characteristics of this region.

Vidharba, which was a part of the ancient *Gondwanaland*, is well known for its geological and mineral wealth. This region has presented evidences of life right from the Jurassic era, a fact established by the discovery of Dinosaur eggshells from *Pisdura*, *Takh* and *Nand*. Vidarbha has been of prime importance archaeologically too, right from the prehistoric era to the late medieval periods. The entire landscape is bespeckled with numerous archaeological sites.

However, its Vidarbha's forest wealth that is unparalleled in the entire state. Almost 60% of Maharashtra's 61,939 sq.km. forest area falls in the Vidarbha region. Vidarbha boasts of as many as 12 PAs which includes 3 Tiger Reserves. It is estimated that more than 90% of Maharashtra's tigers reside in Vidarbha, especially eastern Vidarbha. Vidarbha truly is the last stronghold of tigers and infact all other wildlife in Maharashtra. And what makes Vidarbha's tigers all the more special is the fact that these tigers are not restricted just to the 3 tiger reserves, rather they are well spread over almost all of Vidarbha's PAs; and most importantly many of these tigers are

actually living outside PAs in reserved and protected forests. Same is the case with all other wildlife species that have their homes in Vidarbha. The forests of Umred, which were not a protected area back when I first got to know them, were a testimony to this fact.

UMRED – KARHANDLA WILDLIFE SANCTUARY : AN INTRODUCTION

It is hard to believe that the tiger forests of Umred-Karhandla lie just 8 km away from the quaint town of Umred, which in turn is about 44 kms from Nagpur. The forests, and now the newly notified sanctuary, derives its name from the town and perhaps the most critical water body of the entire PA viz. the *Karhandla lake*. The 192.3 sq.km. Umred-Karhandla Wildlife Sanctuary (UKWLS), with a predominantly hilly terrain, is a part of the larger "Tadoba Landscape". *Dhivakuti* at an altitude of 1197 ft. is the highest point. The *Maru* river divides the sanctuary into almost two equal halves, the eastern zone and the western zone. The climate here is hot, just as it is throughout Vidarbha. During summers, temperatures soar to as high as 48°C. While UKWLS is dotted with numerous seasonal nullahs, streams, and rivulets, it's the major lakes of the PA viz. *Karhandla*, *Tarna*, *Wahi*, *Shegaon*, *Ranai*, *Bhiwapur*, *Indira Sagar*, *Maalai*, *Marupaar*, *Khapri*, and *Bhansara* that sustain sanctuary's wildlife by meeting their water requirements throughout the year. The entire area's wildlife gets primarily concentrated around these water-bodies during the hot summers, and I have observed tigers cooling off themselves in these lakes and water-tanks on numerous occasions. The backwaters of the rather ill-conceived *Gosikhurd dam* have

submerged a substantial amount of forests on the periphery of the sanctuary, but perhaps the only silver lining of this project has been the fact that it acts as a great water-source for the wildlife.

Prior to the sanctuary's notification, the forests of Umred were a mixture of Protected and Reserved Forests belonging to three different divisions viz. the Nagpur and Bhandara territorial divisions and the Forest Development Corporation of Maharashtra (FDCM) division. Once these forests were notified as a wildlife sanctuary, the administrative divisions were reorganized and the sanctuary was divided into three ranges viz. Kuhl, Pauni and Bhiwapur and 26 beats. There are five villages within UKWLS – Mujabi, Chichagaon, Jogikheda, Dongargao and Ranbodi – and another 28 villages adjoining the wildlife sanctuary which exert huge biotic

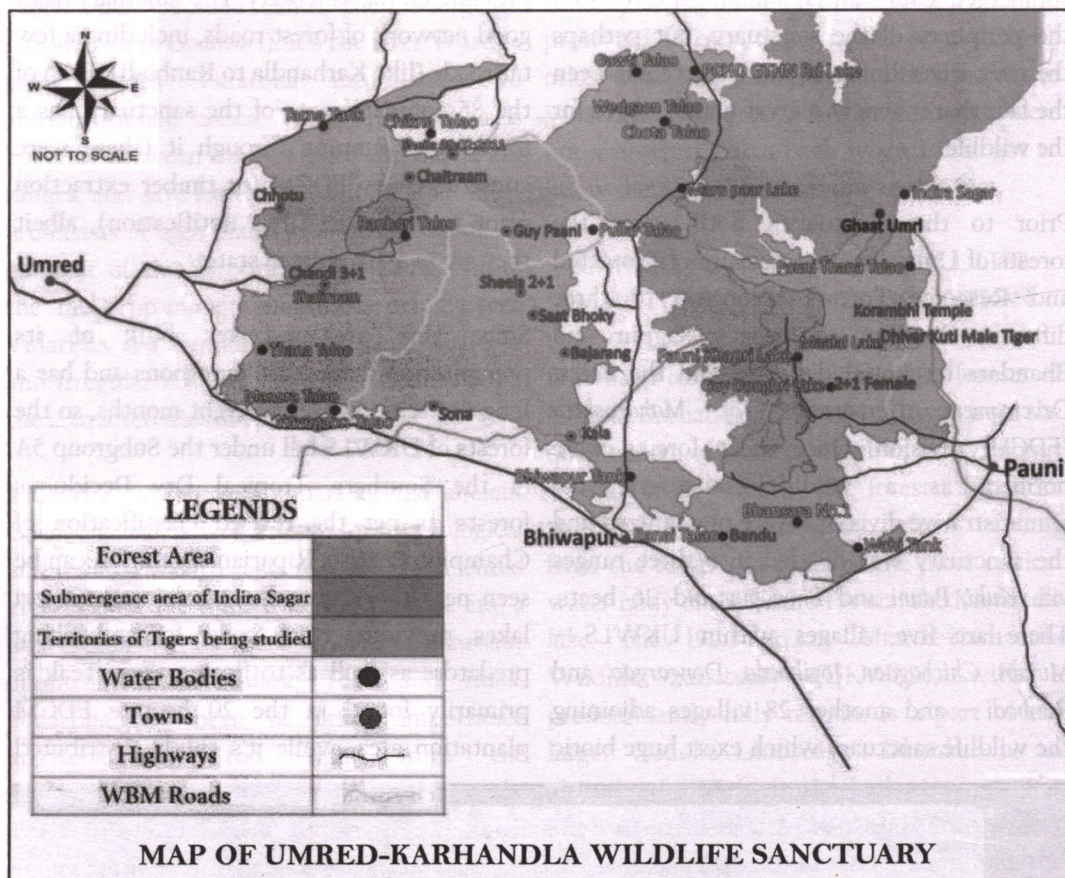
pressure on the sanctuary. The sanctuary has a good network of forest roads, including a few tar roads (like Karhandla to Ranbodi). Each of the 85 compartments of the sanctuary has a forest road running through it (these were constructed by FDCM for timber extraction prior to the sanctuary's notification), albeit they are in a dilapidated state.

Since this area receives bulk of its precipitation during the monsoons and has a long dry season of about eight months, so the forests of UKWLS fall under the Subgroup 5A of the Southern Tropical Dry Deciduous forests as per the revised classification of Champion & Seth. Riparian vegetation can be seen near the Karhandla, Maalai and Khapri lakes, providing thick cover for ambushing predators as well as to fleeing prey. Teak is primarily found in the 20 hectare FDCM plantation area, while it's thinly distributed



Roheet Karoo

Umred-Karhandla's lifeline – the Karhandla Lake



throughout the sanctuary area. Bamboo patches are present in the moist and hilly stretches of the sanctuary, while they have been planted in the few areas of the Pauni range. There are small patches of scrub forest near Pullar, Ranbodi and Kolhari. And while there aren't many open spaces and natural grasslands in UKWLS, there certainly are a few areas which can be developed into one. These potential sites were created due to the relocation of a few villages lying along the Maru River during the Gosikhurd Dam construction project.

STATUS OF WILD LIFE

The day we first visited this forest, we knew

that this wilderness is home to a wide variety of fauna, occurring in good numbers. Soon enough we started coming across wild animals that we thought could only be encountered in a National Park or a Wildlife Sanctuary. Over the years I have come across tigers, leopards, wild dogs and even rarely seen mammals such as honey badgers, pangolins and flying squirrels. Large herds of gaur, sambar, cheetal and nilgai are a common sight for us now. This plethora of diverse wildlife was what eventually led to the notification of Umred's forests as a wildlife sanctuary. The fact that this forest was also a major corridor for movement of wildlife throughout the larger Tadoba landscape made

Robert Karoo



A sub-adult Tiger in Umred-Karhandla Wildlife Sanctuary

the importance of these forests all the more pronounced.

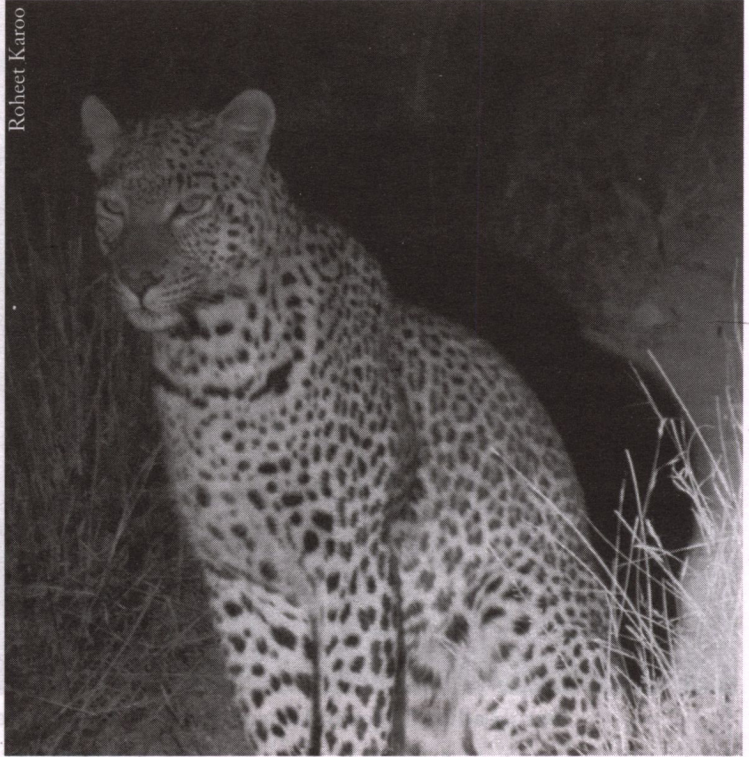
mated again and will be delivering new cubs soon.

When I had first heard reports of tigers in Umred's forests in 2007, I had suspected that even if somehow the villagers' stories were true, then maybe the tigers were transitory animals that perhaps used to temporarily come over into this area from Tadoba through the *Brahmapuri* territorial division. However, within a few months after I started exploring this area, I realized that these were no transitory animals, they were Umred's very own resident and breeding tigers. Over the years, I have observed 3 tigresses successfully raise 7 cubs in UKWLS, and each of these cubs went on to establish their own territories within the sanctuary. Right now, I believe that the aforementioned 3 tigresses have

As I would find out, Umred's elusive leopards turned out to be not-so-elusive after all. I have been blessed with regular sightings of this lithe cat, and I believe there are about 15 different leopards in UKWLS. One of my most memorable sightings was when our team and the forest department officials sighted a female leopard with 2 cubs in her tow near the Karhandla lake. Another familiar 'face' in the forest is an old male leopard which is regularly seen in a forest area known as *Guypani*. Regular leopard movement has also been observed *Satbhoki*, *Bhowri*, *Wanoda*, *Pandhragota* and *Taas* forests of *Bhiwapur* range; *Dhamna*, *Butitola*, *Mandhal*, *Gothangao* and *Marupaar* forests of *Kuhi* range; and in

Jogikheda, Korambi, Khapri, Dhivarkuti and Thana forests of Pauni range. Unfortunately, there have also been a few cases of leopard-human conflicts in Umred over the past few years. A male leopard who was regularly lifting cattle from a village called *Nakshi* attacked and injured 3 men working in the fields over a time span of 4 hours. Faced with a hostile crowd, the forest department tried trapping the animal, but in vain.

Roheet Karoo



Leopards, like the one above, are regularly seen in Umred-Karhandla's forests

In an another case, a 3 month old leopard cub fell in a farm well near the *Kolhari* village adjoining the sanctuary on 8.6.2009. The villagers of Kolhari had been regularly sighting a female leopard with her three cubs in the vicinity prior to this accident. The injured cub was rescued out of the well by the joint efforts of the Forest Department and our organization and treated at the *Maharajbaug Zoo* in Nagpur. In another remarkable success our organization and the Forest Department joined hands in successfully reuniting the cub with his mother once he was declared fit after a few days of treatment. In yet another incident, an approximately 1 year old male leopard entered a village near *Mandhal* and took shelter in a house in the middle of the village. The Forest Department and our organization successfully

tranquilized and later released the leopard in the core area of UKWLS.

Wild dogs are the top canid predators of Umred-Karhandla. We have mostly encountered them in the forested environs of *Karhandla*, *Ranbodi*, *Pandhragota*, *Pullar*, and *Maalai* lake. I can never forget the incredible sight of a pack of 19 wild dogs frolicking around the *Malaai* lake one hot afternoon in May 2010. Another pack of 10 wild dogs has its territory around the *Karhandla* lake. In my personal opinion, the number of wild dogs has definitely shot up in Umred-Karhandla over the past 3 years, and this bodes well for the sanctuary because a growing wild dog population is emblematic of the fact that the prey base of Umred has

increased as well and is capable of sustaining an increasing population of these predators.

Among other canid predators, wolves are well distributed in low density over the entire sanctuary area, while hyenas are very rare. Both these animals tend to occupy the forests on the periphery of the wildlife sanctuary. Jackals are widely distributed and commonly seen throughout the PA and beyond. Foxes too are commonly seen throughout the sanctuary.

Sloth bears are frequently observed around the Karhandla Lake. I remember sighting a pair at Karhandla Lake one April evening in



Roheet Karoo

Wild Dog numbers have been on the rise in Umred-Karhandla Wildlife Sanctuary

2010. They have also been sighted quite often in the Pauni range. Bear-human conflict, however, is a matter of concern for us. There have been bear attacks on villagers of *Thutanbori* and *Khapri* in 2009, and another few incidents of conflict in the Pauni range.



Roheet Karoo

Few wildlifers have ever seen a Honey Badger or Indian Ratel in the wild, fewer still have managed a photograph of this elusive mammal. However, the author was incredibly lucky to spot & photograph a pair of Indian Ratel in Umred-Karhandla

One of the rarest mammals of mainland India is the ratel or the honey badger. Few wildlifers can claim to have seen one of these primarily nocturnal creatures, but I was lucky enough to photograph a pair of honey badgers near the *Pandhragota Rest House* in 2007. Among the lesser mammals, UKWLS is home to jungle cats, common palm civets, small Indian civets, flying squirrels, pangolins and Indian porcupines.

Gaur, the world's largest wild cattle, is pretty well distributed across Umred's forests. Their population has almost quadrupled over the last 6 years. Just 14 gaurs were recorded in 2005, but today there are more than 50 of them in UKWLS. The biggest herd in the sanctuary consists of 22 members, and is regularly seen in and around the *Pullar-Satbhoki* forest. The second largest herd with 15 animals is usually found foraging near the Karhandla lake. Then there are a number of smaller herds (with sometimes as few as 4 animals) distributed over the entire sanctuary area. Nilgais or blue bulls are observed in good numbers in almost every beat of the sanctuary. I have seen large herds with upto 20 animals in the sanctuary.



Roheet Karog

Nilgais are among the primary prey species for Umred's predators

Marupaar, Dhamna, Pandhragota, Ranai lake (Jogikheda) and Wahi forests of the sanctuary. Barking deers, usually seen in pairs or solitary, are occasionally seen throughout the sanctuary area. Wild boars too are numerous in Umred's forests, and their numbers have steadily increased over the past few years.

TIGERS OF A LESSER GOD!

The primary prey species of Umred's predators are sambars, cheetal or spotted deers and wild boars, all of which are available in good numbers in UKWLS. Large herds of sambars, with as many as 20 members, were noticed around the Maalai lake as well as in *Khapri* and *Marupaar* forests. During my study of this area, I have often seen tigers feeding on sambar kills. Cheetal are abundant in the sanctuary's mixed forests, and huge herds of upto 50 deers have been sighted around the Karhandla lake. They can also be almost always seen in good numbers in *Khapri, Pullar,*

The tigers of Umred-Karhandla have always been "*Tigers of a lesser God*". Nobody ever bothered about their safety and security up until 2008; infact almost no outsider even knew that there were tigers in Umred's forests. Over the last 4 years, not only have we established the presence of resident and breeding tigers in the forests of Umred – a revelation that went a long way in getting the forests notified as a sanctuary – but we have also managed to identify and monitor as many as 8 adult tigers and their cubs. And even



Rohit Karoo

'Bajrang' , a strong young male Tiger in his prime, snarls at the author

though some conservationists frown upon this custom, nonetheless we have given all these individuals names for the sake of convenience.

Chaitram, as we call him, is the biggest and oldest male of Umred-Karhandla sanctuary. I have been observing him for more than 4 years now, and estimate his age to be around 10-12 years. His territory is spread over an area of roughly 17 sq. kms. around the Tarna lake.

Bajrang is another young male, 5-6 years of age, with a roughly 20 sq.km. territory in Kuhl range. The only matter of concern with these two dominant males of UKWLS is the fact that they regularly kill cattle in the village inside or adjoining their respective home territories.

During the course of our study, we twice came

across an unknown male tiger at Dhivarkuti in the Pauni range in April 2010; and it was the first sighting of a tiger in this range.

Sona, aged around 12-14 years with a home range of approximately 15 sq.kms. , is the oldest tigress in Umred and recently successfully raised a male and a female cub. Unfortunately, she also has the dubious distinction of being the first tiger to kill a human in Umred-Karhandla. Moreover, the fact that she is known to move outside the forests and has her territory very close to the Nagpur-Chandrapur highway is another issue of concern. She has been spotted a number of times on the highway, as well as near the railway lines that cross the *Raanmangli* and *Taas* villages that adjoin the sanctuary.

Chandi, is the most well behaved tigress I've



Rohet Karoo

An alert 'Chandi' watches the author. Over the years, the author has watched this gentle young tigress successfully raise 3 cubs. Below is the image of one of her cubs ever known. She resides in a 6-7 sq.km. area around the Karhandla lake which has the highest concentration of herbivores in the entire sanctuary. And perhaps this is why not a single cattle kill or human-attack has been attributed to her. She hardly ever moves out of her prey-rich home turf, and we have seen her successfully raise 3 cubs (a male and 2 females). We even named the forest road running through the forests around the Karhandla lake as "Tiger Road" since Chandi can often be seen ambling on this road. The only bone of contention for us is the fact that her resting place is too close to the Karhandla village.

Another young tigress whose fortunes we have been following for some time now is *Sheela*. She



Rohet Karoo

next few months I saw her raise two healthy cubs (a male and a female).

In our regular field visits, we have also seen another female with two young cubs near Maalai lake. However, we don't know this tigress well yet to give her a name. We also came across tracks of a previously unknown tiger near Ranai lake, I suspect him to be *Bandu*, the son of Sona who has carved out an independent territory for himself here.

And so, in total, I approximate Umred-Karhandla's tiger population to be more than 20 tigers!

TROUBLE IN PARADISE

In spite of such great potential, Umred-Karhandla sanctuary is besieged with problems. The PA has 28 villages on the fringes and another 5 inside the sanctuary that exert tremendous biotic pressure on this relatively small forest. Thousands of cattle from these 33 villages enter the PA every day and compete with wild herbivores for fodder, thus putting intense pressure on the wild ungulates. Some *Kathiawadis* (nomadic herdsman) bring in their cows and sheeps from far off areas to graze them in Umred's *Navegaon* and *Khapri* forests. While most of the cattle that enter the PA do so illegally, few owners have been issued grazing license by the Forest Department mainly because many of Umred's forests are Protected Forests. Grazing cattle not only carry the risk of passing on contagious disease to the wild herbivores, they also are very vulnerable themselves to attack by leopards and tigers. A number of cattle get killed within Umred, and

this creates hostility between their owners and wildlife. Moreover, there have also been cases of herders being attacked and seriously injured (2 grazers have been killed as well) killed by tigers, which further intensifies the conflict.

One of the most pressing issues facing the PA is the high dependence of villagers on firewood as their domestic fuel. This ever-increasing demand is almost always met by illegal logging inside the sanctuary, and the wood is then transported out of the forest to the adjoining villages on head loads, bicycles, bullock carts and even auto rickshaws! These woodcutters too are at the risk of getting attacked by wild animals, especially tigers and leopards – and many of them actually have been attacked over the years – further 'fuelling' conflict. It is imperative to provide alternate energy sources to these villages in and around UKWLS to reduce their dependence on firewood.

Another 'burning issue' is the problem of deliberate manmade forest fires that ravage the sanctuary every year leading to loss of wildlife and putting them under tremendous stress. Most of these forest fires are the handiwork of *tendu* leaf collectors and *mahua* flower pickers ; the *tendu* leaf collectors believe that setting fires infuses new growth in *tendu* trees while *mahua* collectors set fire to the undergrowth to make the collection process easier. The following figures drive home the seriousness of this problem : ~60 sq. kms. of prime forest was destroyed due to fires set by *tendu* leaf collectors in 2011, while another ~40 sq.km forests were burnt down in 2010. Some cases of forest fires have also

been attributed to grazers and even poachers who set fire to increase their field of vision and also collect the antlers shed by cheetal and sambars.

Poaching pressure is high across the project area. The poaching hotspots in Umred are Karhandla, Shegaon, Marupaar, Maalai, Dhivarkut and Bhansara forests. Cheetal, sambar, wild boar and peacock are the primary targets of local poachers, as these species are always in demand for their meat. Various techniques of poaching such as shooting with country-made guns, snaring and even predation by dogs are applied to hunt down herbivores. Birds are poached by netting them mostly near the lakes. In some cases, it has also been observed that poachers often fill dried up water holes and then lie there waiting for an unsuspecting animal to turn up. I have come across *machans* and hides constructed by poachers near the Maalai, Ranai, Shegaon and Karhandla lakes. Anecdotal information also suggests that traditional tiger-hunting tribes from Madhya Pradesh were active in Tarna and Maalai forests of the sanctuary in 2007 and 2009 respectively. Tigers of Umred face a much severe threat of poaching compared to other PA's of the state given the fact that the sanctuary has been notified just a few months back and hence lacks the necessary infrastructure and protection mechanisms to



The author believes that the rate of poaching of prey species, such as these Cheetals, has come down over the last few years due to the joint-efforts of the Forest Department and WLCDC. However, the threat of poaching persists.

protect its wildlife effectively. The fact that the healthy tiger population of the sanctuary is getting a lot of local media attention makes the tigers, leopards and other wildlife of the sanctuary all the more susceptible to poaching. Cases of man-animal conflict add up to this problem as well. However, thanks to the joint efforts of the Forest Department and our organization, there has been a considerable reduction in poaching and wildlife numbers have gone up in most areas of the sanctuary.

Man-animal conflict is an eternal problem affecting almost all PAs of India, and UKWLS is no different in this aspect. However, a troubling development is the rise in man-animal conflict around Umred over the past couple of years. Crop raiding by wild ungulates in the villages in and around Umred-Karhandla is a serious problem, while I've already discussed the conflicts caused by

by cattle-lifting habits of tigers and leopards. However, the most worrying issue is the alarming rise in the attacks on humans by tigers and leopards. As many as 4 people have been killed by tigers in the last couple of years, while another 6 people had been killed by tigers before that. Dozens of people have been injured in tiger, leopard and bear attacks. However, almost all of these people were killed or injured deep inside the forest where they had ventured to either collect tendu leaves, mahua flowers or bring home their cattle. Most of the times they walked into a sleeping tiger or leopard or surprised the big cats. Most attacks have occurred in the Pauni range, followed by the Bhiwapur range, while the Kuhi range has only seen a couple of cases of attacks on humans.

Another emergent threat to Umred is the presence of mines within a 25 km radius of the sanctuary. There are plans to further expand these mines, and this will adversely affect the corridors connecting UKWLS to other PAs of the region. Moreover, the numerous canals that have been built around Umred's forests as a part of the Ghosikurd Dam project are a major threat to the wildlife. Many animals including tigers have fallen into these canals, some of them died while other injured ones were rescued through the joint efforts of the Forest Department, our organisation and local people. We recently rescued the tigress *Kala* (one of the cubs of *Sona*) from one such canal.

MAKING CONSERVATION WORK

The importance of Umred-Karhandla can't be stressed enough. Located on the extreme end of the larger Tadoba landscape, the wildlife

sanctuary is connected to Tadoba Tiger Reserve and Navegaon National Park through a series of forested corridors, although most of these corridors are much degraded and suffer from encroachments and high human interference. The breeding tigers of Umred are already pumping in new blood into the Tadoba landscape through dispersing cubs, hence maintaining the genetic vitality of the Tadoba metapopulation. With adequate protection to the sanctuary and revival of dispersing tiger corridors, Umred-Karhandla has the potential to turn into the second major source population site (after after Tadoba tiger reserve) for the Tadoba landscape.

And for making conservation work in UKWLS, a few steps need to be taken right away. A ban on cattle grazing must be enforced in a major portion of the sanctuary, while a few small patches maybe left open for the time being to meet local grazing demands. Over the longer run, the quality of local livestock will have to be improved so that the owners themselves prefer stall-feeding them rather than risk losing their precious assets to a predator in the forests. Moreover, grazing licenses should be issued for particular seasons, and defaulters need to be penalized heavily. Checking illegal grazing can be achieved only through efficient patrolling.

Efforts should be made to increase the fodder base of the sanctuary by planting native grass species. Plantation of species other than teak, particularly fruit bearing ones should be taken up as well. *Lantana* eradication should be done to help palatable grasses to grow.

The protection infrastructure of the sanctuary

A TIGER RESCUE OPERATION IN PHOTOGRAPHS

"Kala" is the 4 year old daughter of *Sona*, and the author had been following her ever since she was a little cub. A year ago, on 13th October, 2011, this young tigress fell into a 30 feet deep well constructed as a part of the Gosikhurd Canal Project. The Forest Department, the author (in green t-shirt) and WLCDC members rushed to the spot as soon as they got the news,, and after a marathon 36 hours rescue operation, Kala was successfully rescued from the well.



A TIGER RESCUE OPERATION IN PHOTOGRAPHS



A TIGER RESCUE OPERATION IN PHOTOGRAPHS



Courtesy WILDC





Villagers living in and around UKWLS need to be provided with alternate livelihood to reduce their dependence on forest; thus not only improving their socio-economic condition but also saving the habitat of Umred's wild denizens such as these Nilgaïs.

needs to upgraded exponentially, for right now it is wholly inadequate. Anti-poaching camps as well as fire-watch towers need to be established in the wildlife rich and strategic areas of the PA to keep a check on poaching and forest fires. An additional force of fire-watchers needs to be employed on contract basis during the tendu and mahua collecting seasons, to assist the regular forest staff in preventing incidents of forest fires, apprehending offenders and also putting out forest fires. A string of check posts and barriers needs to be installed at strategic places to prevent illegal entry into the sanctuary area. Regular foot patrols to keep a check on poachers and their snares is absolutely necessary. To achieve these goals, the staff strength of the PA should be increased and new forest guards should be recruited, trained, armed and equipped with latest wildlife monitoring gadgets. Additional vehicles need to be provided for effective

patrolling of the entire sanctuary. Poor communication between the administration and the local people is often responsible for the negative attitudes of people towards wildlife. The administration must be sensitized and trained to handle conflict situations.

It has been observed that most tigers of Umred make their home territories around the major waterbodies of the PA. And these tigers move very close to the villages during the summers due to acute shortage of water inside the forest, and then get into conflict with the local villagers. Hence, this absence of perennial water sources in the PA is the one of the primary reasons fuelling conflict, and moreover it also localizes tiger movement making them extremely susceptible to poachers. Creating a string of water bodies distributed throughout the sanctuary, can bring down man-animal conflict as well as reduce the threats of

poaching. Monetary compensation on priority basis should be given to grazers who lose their cattle to predators in order to mitigate chances of retaliatory killings. Efforts need to be made towards relocating the *Ranbod* village which witnesses a lot of man-animal conflict and is witnessing large scale encroachments. Farmers should be provided with modern farming implements and organic non-polluting fertilizers so that they get substantial returns from agriculture and need not take up cattle-breeding as an additional source of income, hence taking off a bulk of the grazing pressure from the sanctuary. Non-conventional energy sources should be provided to the villagers at subsidized rates to reduce their dependence on forests. Local people should be directly involved in various conservation initiatives in and around the sanctuary area, and offered employment opportunities by recruiting local youth as guides as well as making them primary stakeholders in all ecotourism activities that would hopefully come this PA's way in the coming future.

LAST WORD

It's been almost 5 years now since I first got to know Umred's unique wilderness, and I still can't believe how this amazing little wild jewel had been neglected for so long. But things are changing for the better, and the notification of this forest as a wildlife sanctuary is the first step in that direction. There is still a long way to go as far as securing the future of Umred's tigers and all their subjects is concerned, and there is a long battle that lies ahead of us, but watching Sona's and Chandi's cubs frolicking and splashing around in many of Umred's lakes gives us all the strength to soldier on.

(The views expressed in this article are the author's own)



Roheet Karoo: Hailing from Umred, Roheet has been passionate about wildlife and forest conservation ever since his school days. He was particularly fascinated by reptiles and began rescuing snakes while still in high school. In 2009, he began serious conservation work around Umred under the tutelage of Mr. Suhas Bokade, his mentor and guru. With the goal of getting the forests of Umred notified as a PA, Roheet founded an NGO, the Wildlife Conservation and Development Center (WLCDC). Over the years, Roheet and his NGO have conducted a number of training workshops for the Forest Department staff, and have assisted them in wildlife monitoring as well as various tiger and leopard rescue operations around Umred. Roheet has undergone training under the guidance of noted wildlife biologist Ms. Vidya Athreya, and has also completed the Game Ranger's course at Karaongwe Game Reserve & Kruger National Park. He can be contacted on his email id : roheetwlcddc@gmail.com

TOURISM TUMULT : THE WAY OUT

By Suhas Kumar



Nirmalya Chakraborty

Editor's Note : The recent furor over tourism in the core areas of India's tiger reserves has caught the nation's imagination and also created deep fault lines within the conservation community on this complex issue. The whole debate began when the Honorable Supreme Court, in a judgment dated 24th July 2012 banned all tourism activity in the core areas of all tiger reserves till further orders, and rapped state governments who had failed to notify buffer areas of tiger reserves in their respective states. After further hearings, the ban stayed in place while the Supreme Court ordered NTCA to frame new eco-tourism guidelines for core and buffer areas of tiger reserves. In all the mass hysteria that followed this order, most people missed the fact that this was an interim order and not a permanent ban on wildlife tourism in tiger reserves. The order started endless debates – the tourism lobby was up in arms and the conservationist lobby was divided with some unequivocally supporting the order while others siding with the tourism lobby. But in all the hoopla that this order has generated, few have actually debated the crux of the argument – How do we streamline unregulated wildlife tourism that plagues our “star reserves”? Why and how did things go so out of hand in these tiger reserves that India's highest judicial body was forced to intervene? Long before the Supreme Court's judgment and the resulting controversy, Suhas Kumar had realized the serious implications of the way wildlife tourism was being practiced and undertook a study exploring all aspects of “tiger tourism” in some of the popular reserves of Madhya Pradesh. Now, post the Supreme Court's judgment, the detailed findings of his study have become all the more important and relevant. The following article answers some of the burning questions raised by the court's judgment and the ensuing controversies.

One of the objectives of management of tiger reserves and other Protected Areas (PA) is to use tourism as a tool to elicit public support for wildlife conservation. However, tourism in PAs must conform to the fundamental objective of conservation and in case of conflict conservation objective must prevail; maximizing revenue from tourism at the cost of wildlife was never in the agenda. But somewhere over the last 8-10 years, this objective seems to have been diluted. I undertook a two year study in the tourist frequented tiger reserves of Madhya Pradesh to explore the nature of tourism practiced in these parks as well its impacts on the reserves and the local people inhabiting its buffer zones. This article critically examines the shortcomings in the present day planning and management of tourism in tiger reserves and suggests ways to make tourism compatible to the primary objectives of conservation.

LEGITIMACY OF TOURISM IN TIGER RESERVES

A tiger reserve has mainly two management units – the core and the buffer and both have different sets of goals and objectives. The objective of managing the core area is to conserve species and areas of crucial conservation importance, while the buffer is managed to reconcile the conflicting interests of resource use by forest dependent local people and wildlife conservation. To put it in simpler terms, the purpose of the buffer is to act as a cushion that absorbs shocks emanating from the outside to protect and retain the sanctity of the core. The buffer, thus, must be managed in a manner that effectively accommodates the needs of the

local people and the wildlife dispersing out from the natal area - the core.

And so here arises that all important question – where does 'tourism' fit in the management objectives of the tiger reserve?

The First Tiger Task Force set up in 1972 initiated Project Tiger in India. One of the goals mentioned in the original Task Force report was: *"To preserve areas of biological importance as a national heritage for the benefit, education and enjoyment of people."*

The Task Force Report, 1972, also visualised recreational use with certain caveat:

"Provide long term conservation of biotopes of which the tiger is an integral part.....Creation of tiger reserves must not be regarded as a cause to sterilize the areas as far as human use is concerned. Regulated scientific and educational use of the area should be made. Recreational use will be permitted provided it is controlled and complementary to the principal object of management.... In case of doubt, conservation of the biotope shall take priority.... Other forms of human disturbance, however, such as commercial felling, collection of minor forest produce, mining, excessive traffic, heavy grazing by domestic livestock are clearly detrimental and must be phased out for complete elimination."

And so the policies and management objectives in almost all management plans called for tourism in tiger reserves to be used as a conservation tool to educate visitors and elicit public support for conservation rather than it being pursued as a commercial, resource degrading, mass-tourism operation that it is today.

Later, the only comprehensive policy on wildlife conservation in the country – the *National Wildlife Action Plan*, 1983 (revised 2002-16) provided definite objectives and directions to tourism happening in all categories of protected areas. The guidelines elicited the following points:

- *Regulated, low-impact tourism has the potential to be a vital conservation tool as it helps win public support for wildlife conservation.*
- *In case of any conflict between tourism and conservation interests of a PA, the paradigm for decision must be that tourism exists for the parks and not parks for tourism, and that*
- *Tourism demands must be subservient to and in consonance with the conservation interests of PA and all wildlife.*
- *While revenues earned from tourism can help the management of the PA, maximization of income must never become the main goal of tourism, which should remain essentially to impart education and respect for nature.*

Section 28 (1) (d) of the Wildlife (Protection) Act, 1972 (WLPA) provides for the issuance of permits for the purpose of tourism in protected areas and Section 38-O (1) (c) empowers the National Tiger Conservation authority (NTCA) to lay down normative standards for tourism in tiger reserves. It is therefore natural and legitimate for the tiger reserves in India to permit recreational use in a strictly controlled manner.

Another point that must be kept in mind is the fact that when tiger reserves were first

constituted in 1973, a tiger reserve was a recognition given to either a national park or a sanctuary as an area important for conservation of tiger and hence was adjudged eligible for receiving financial and technical support from Project Tiger (now NTCA), GoI. After the 2006 amendment to the WLPA, tiger reserves have received legal status as a separate category of protected areas with two distinct management units – a core and a buffer. Obviously, in all the task force reports that were tabled right from 1972 to 2006, any reference to tourism meant tourism within the national park or sanctuary (now designated as core under 38 V of the amended WLPA).

ECOTOURISM – IS IT BEING TRULY IMPLEMENTED?

In last decade or so, unplanned and unregulated growth of tourism infrastructure around tiger reserves became an emerging threat to tigers as their dispersal areas and corridors – already choked with present and expanding villages, roads and canals, mines and industries – were now threatened by the proliferation of new hotels and large resorts. These resource guzzling structures with their huge fenced premises not only occupied critical movement corridors but were also a constant source of disturbance, pollution and depletion of the forests and ground water resources that belong to the local denizens – both wild and human – first. Inside the PA, lack of appropriate planning and implementation of management objectives, plus poor law enforcement further impacted tiger and its habitat.

The National Wildlife Action Plan 2002-16 prescribes implementation of 'Ecotourism' in protected areas. The NTCA also advocates the same. Tourism in the well-known tiger reserves has a history older than the concepts of sustainable tourism and ecotourism. So most PAs suffer from the ills of traditional mass tourism that hardly cares for the environment, the ecology or the interests of local people. Today only implementation of ecotourism in its truest spirit can save these precious areas from certain doom.

There is a globally emerging consensus that ecotourism seeks to combine conservation, communities, and sustainable travel into one workable whole. This happens when ecotourism activities adhere to the following principles:

1. Minimize negative impacts of tourism linked development and activities of visitors on the environment, ecology and local cultures.
2. Build awareness and respect for the environment and local culture, hence ensuring that both visitors and hosts receive positive experiences.
3. Develop methods and mechanisms to direct sustainable financial benefits to local people and local economies.
4. Provide financial benefits for conservation of natural resources on which tourism depends.
5. Promote sensitivity towards the host countries' political, environmental, and social climate.

Even though today ecotourism is considered as the most rapidly expanding sector of the travel industry, and is promoted as a way to achieve environmental conservation and sustainable development, unfortunately little or no effort is visible in the tiger reserves towards involving and benefiting forest dependent local people. And so, inspite of all the utopian goals and advantages that the term 'ecotourism' implies, it has remained nothing more than a paper-tiger, a concept that gets thrown about a lot in debates and discussions, but one which has no practical implementation in its true sense.

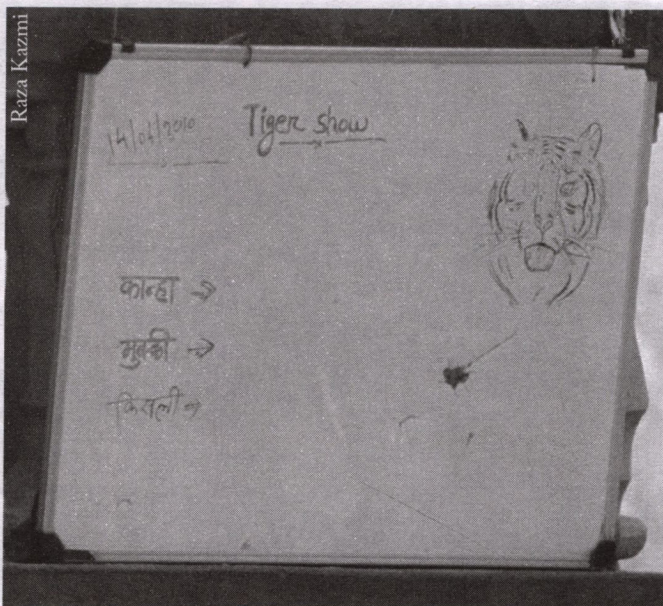
"TIGER SHOWS" & MISMANAGED TOURISM

'Tiger show' – peculiar to a few tiger reserves of Madhya Pradesh – refers to the deliberate pursuit of tigers by cornering them using the park's trained elephants, and then bringing tourists alighted atop the elephants to gawk at the hapless big-cat. Three tiger reserves in Madhya Pradesh primarily arrange "tiger shows" viz. Kanha, Bandhavgarh and Pench Tiger Reserve.

The practice of tracking tigers using trained elephants and *mahouts* with the aim of showing them to the visitors began in early 1980's. It was only curtailed for a brief period during 1995-96, following protests by some conservationists. But due to various pressures, especially from the powerful tourism lobby obsessed with the tiger and offering promises of guaranteed sightings to lure visitors, the restrictions were soon relaxed. The elephant ride permitted in the notified park rules was now unofficially christened as 'tiger show';

while in 2010 the rules were amended to formally include the word 'tiger show' under the activity-'Elephant ride'. And while several guidelines were and still are issued at regular intervals by the NTCA and the Chief Wildlife Warden (CWLW) of Madhya Pradesh to regulate 'tiger shows', little of it has actually translated into action on the ground. Infact, in a study I conducted at Kanha, I found that even though only 21% of the visiting public could actually avail the 'tiger show', an overwhelming majority of rowdy tourists belonged to this small percentage of visitors.

Raza Kazmi



A white-board at Kanha Tiger Reserve displaying the details of a 'Tiger Show'

But the 'tiger show' is just a by-product of the bigger problem of mismanaged tourism in the 'star reserves' of Madhya Pradesh. The code of conduct prescribed through mandatory instructions issued by the CWLW and NTCA are mostly ignored, animals are harassed and their movement hindered by vehicles. The directions of NTCA and CWLW that mandate maintaining at least a 30 meter distance from the animal during viewing and at least 500 meters between two vehicles are almost always trashed during the 'sighting frenzy'. Photographic evidence is available in the public domain to corroborate the above violations.

But, lest readers get me wrong, all tourists do not behave this way and are not tiger-obsessed. During my study on ecotourism

strategies being practiced in Kanha and Pench (2008-2010), 52 % of visitors at Kanha stated that they would return unsatisfied if they failed to see a tiger in the reserve. For the remaining 48 % other aspects of nature were equally important and they would be return satisfied even if the failed to sight the big cat. In fact, 78.1 % of the foreign visitors stated that they wouldn't mind if they didn't see a tiger as other aspects of nature were equally important to them.

What was rather heartening to observe was that majority of tourists at Kanha (78%) accepted that overcrowding of tourists and vehicles was a negative and a bad way to practice tourism. Field personnel from Kanha, Pench and Bandhavgarh echoed the same views (35%). Some expressed apprehension that continuous exposure of tigers to humans may make them more vulnerable to poaching,



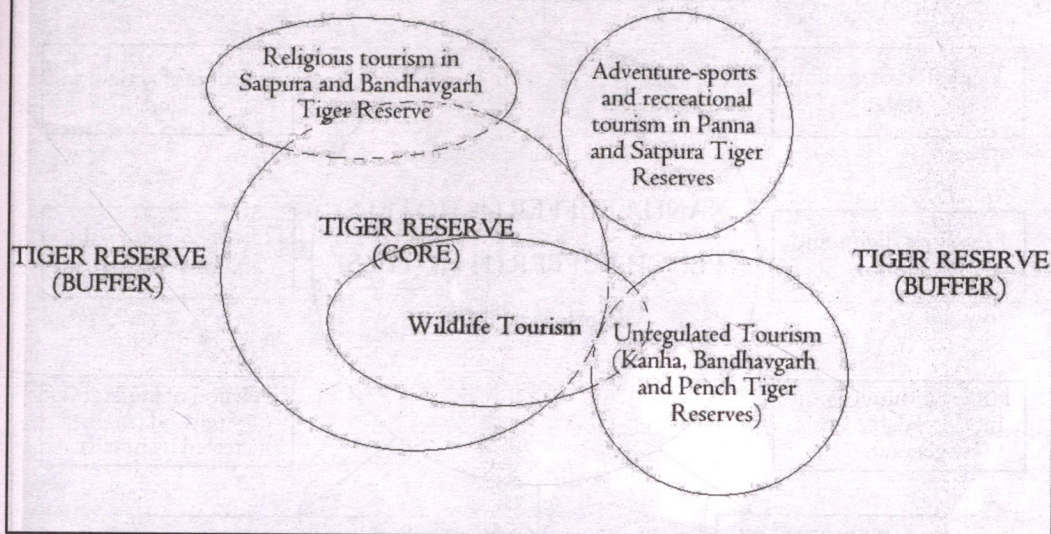
A 'Tiger Show' in progress at the Bandhavgarh Tiger Reserve

while others opined that that the pollution caused by vehicles and the littering was adversely impacting the health of wild animals. Majority of the field personnel expressed their frustration at being under constant pressure to ensure tiger sightings, while others felt overburdened with tourism jobs at the cost of their primary job of ensuring better protection to the wildlife.

This highlights the immediate need to wean away tourists from their obsession with tigers and facilitate their indulgence in less intensive and relaxing activities such as bird watching to experience different habitats and their rich biodiversity, and interacting with the local communities. Achieving this goal would

require a strong interpretation programme that should offer a combination of both personal services in the form of excellent interpreters & visitor-relations personnel, as well as other interactive services like nature interpretation centers, wayside signages, and attractive brochures and handouts. Regulating vehicular traffic within tourism zones and ensuring strict adherence of wildlife viewing rules would require a carrot and stick approach wherein punitive action needs to be taken against tourists, guides and drivers by fining them heavily and even banning their entry to the park either temporarily or even permanently based on the severity of their offence. At the same time, good practices need to be encouraged and incentives offered to those who adhere to rules.

PRESENT DAY MOSAIC OF NATURE BASED TOURISM IN TIGER RESERVES OF MADHYA PRADESH



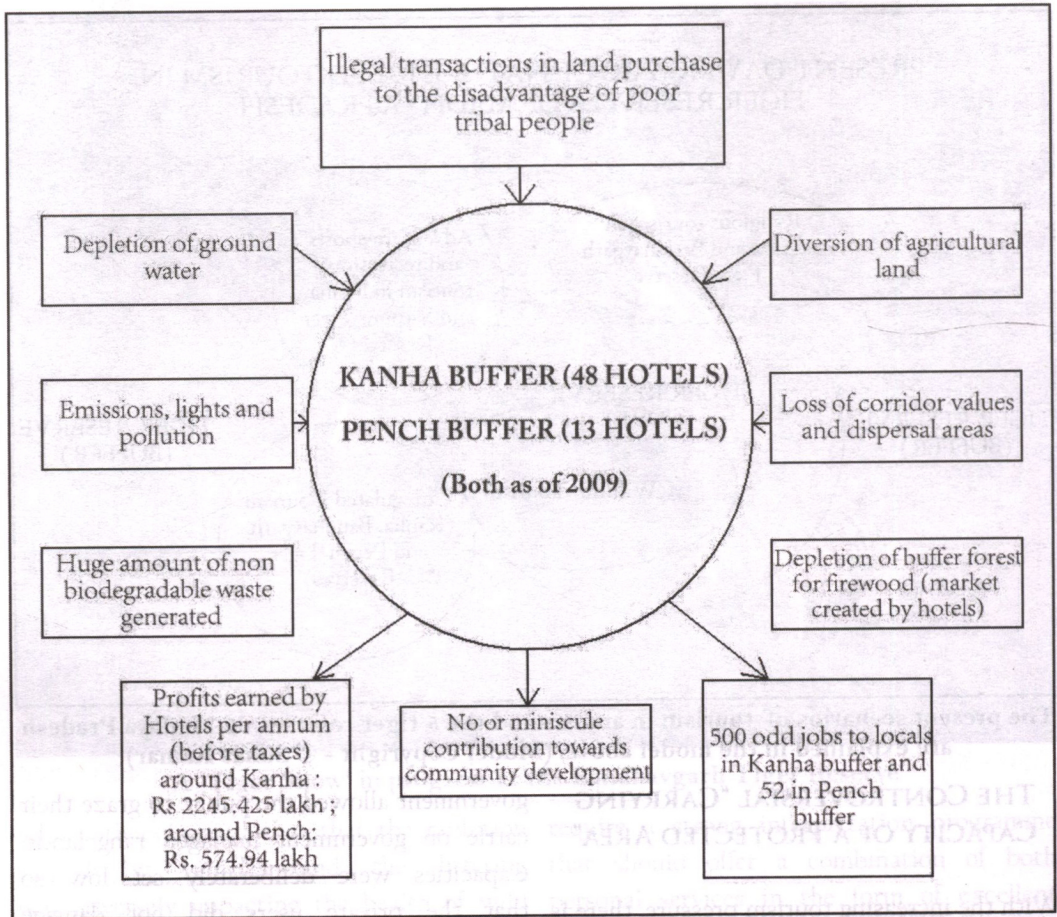
The present scenarios of tourism in and around the 5 tiger reserves of Madhya Pradesh are explained in the model above. (Model Copyright - © Suhas Kumar)

THE CONTROVERSIAL "CARRYING CAPACITY OF A PROTECTED AREA"

With the increasing tourism pressure, there is growing demand for determining the recreational carrying capacity of a protected area. The demand emanates from the belief that while managing a protected area, a maximum number of users must be specified, beyond which recreational use of the forest becomes unsustainable owing to the diverse negative impacts that it puts on the PA's resources.

The idea of putting a cap on the number of tourists in a forest is borrowed from the North American range management techniques. In the US, setting a carrying capacity became an essential part of range management when the

government allowed the public to graze their cattle on government managed rangelands. Capacities were deliberately set low so that the private users did not damage government lands even after years of low forage production. This system never worked though, and the primary reason was that a uniform carrying capacity didn't take into account the various biological and climatic factors that influence a forest's productive capacity. So the ranges suffered from over grazing in unproductive years while in productive years, the limits were wasteful. On private lands experienced ranchers never set carrying capacities; rather they monitor conditions (rainfall, forage productivity, etc.) and adjust the number of cattle allowed in their lands during a particular period



Impact of Hotels/Resorts around Kanha and Pench tiger reserves are explained in the model above. (Model Copyright - © Suhas Kumar)

accordingly (Edington & Edington, 1986).

Talking from an Indian perspective, determining the carrying capacity for recreational use of protected areas is much more complex than determining the number of cattle that were to be allowed to graze in a particular rangeland. Even though mathematical models may provide a carrying capacity for a given PA, determining the real carrying capacity of a PA is 'neither simple nor particularly useful' for a forest manager (Hammit and Cole, 1987).

McArthur, S. (2005), opines that 'Carrying capacity is the lazy man's answer to visitor management, just like fences and regulations! Sophisticated models that incorporate feedback (monitoring) and adaptive management are more accountable and socially just'

In our tiger reserves, managers depend on a methodology developed by Cifuentes, M. in 1992 to determine the visitor carrying capacity in PAs. This methodology suffers from subjectivity and is amenable to easy modifications by practitioners. The vehicle



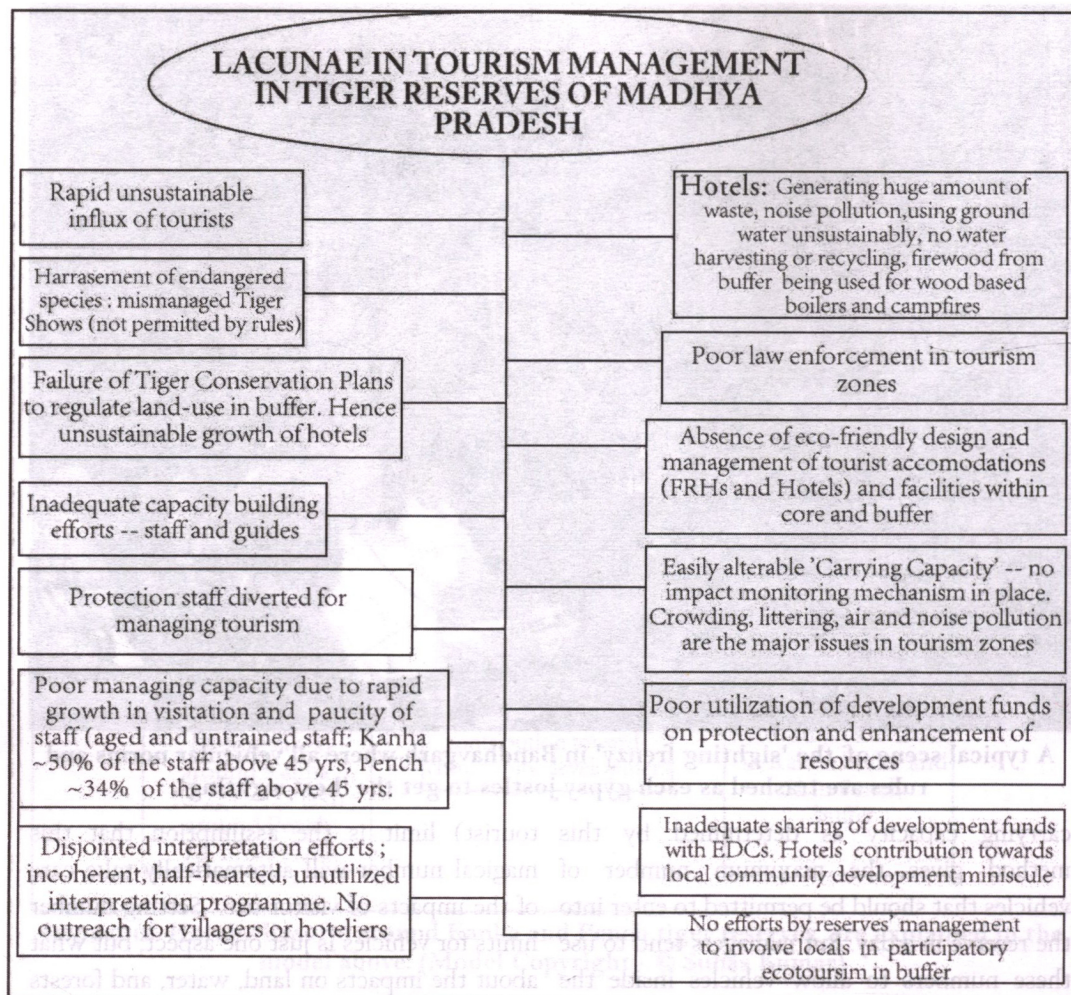
A typical scene of the 'sighting frenzy' in Bandhavgarh where all vehicular norms and rules are trashed as each gypsy jostles to get the 'best sighting'.

carrying capacity as determined by this method gives the maximum number of vehicles that should be permitted to enter into the reserve in a day. But managers tend to use these numbers to allow vehicles inside the tiger reserve in the morning as well as the evening, so that they can accommodate more tourists and earn increased revenue for the PA without taking into account the impacts of allowing so many vehicles and people into the reserve. As a cascading effect of increased numbers going into the park, hoteliers and land developers start building more hotels and resorts around core critical habitats. And this vitiates the very purpose of setting limits.

Another basic flaw with the above methodology of setting vehicle (and hence

tourist) limit is the assumption that this magical number will automatically take care of the impacts of visitor use. Setting number limits for vehicles is just one aspect; but what about the impacts on land, water, and forests of the buffer zone that are so essential to the conservation of tiger? What about the impacts on local people, their land, water, culture and economy, whose support is critical to the long term survival of wildlife in our PAs? The assumption that the adverse impacts of tourism are only due to vehicular traffic is, therefore, fallacious.

McArthur, S. (2005), contends that despite being more than three decades old, carrying capacity remains a vague and elusive concept and there are no fixed or standard tourist



The various lacunae in the management of wildlife tourism in the various tiger reserves of Madhya Pradesh is explained in the model above. (Model Copyright - © Suhas Kumar)

carrying capacity values. In fact, carrying capacity varies, depending on place, season and time, user behavior, facility design, patterns and levels of management, and the dynamic character of the environments themselves. Besides, the number so fixed is seldom adhered to due to pressures from tourism operators and political power centers. The case of Galapagos National Park is a classic example where despite presidential moratorium and prohibitory orders, visitor numbers continued to swell, and today more than 70,000 visitors visit these fragile and unique islands annually (Kumar, S. et al. 2006).

A review by Butler et al. (1992) points out that carrying capacity is largely influenced by the quality of management and therefore implementation of carrying capacity requires adept management. The attraction and sustainability of a tourist destination is

relative to the standard of maintenance and management. If the management is poor even a small number of visitors may produce serious adverse impacts.

I firmly believe that, fixing certain limits on number of vehicles alone would not help the managers at all; the need is to plan meticulously, explain the desired ecological and social conditions for the reserve and then set limits of acceptable changes over a long time frame for both core and buffer zones. Besides, one must recognize the fact that the threat of adverse impacts of tourism is not only from visitors entering tiger reserves, but also from unregulated growth of visitor facilities in the vicinity. In fragile areas like a tiger reserve where the object is to manage a viable population of tiger and ensure its survival in the landscape, it is imperative to safeguard its habitats and movement corridors.

Rather than merely relying on the number of visitors entering a PA, it would be much more logical and useful to follow the 'Limits of Acceptable Change - LAC' or "Visitor Experience and Resource Protection Process - VERP" methodology which is used in USA and some other developed countries. Visitor experience and Resource Protection Process (VERP) is based on age-old practice of private ranchers — set Limits of Acceptable Change (LAC) in the rangeland, and monitor and manage changes that are unacceptable (Kumar, S. et.al 2006). The limits should be determined on the basis of capacity to manage and visitor behavior as a precautionary principle.

STREAMLINING HAYWIRE TOURISM: SOME SUGGESTIONS

Even though the whole tourism debate is obsessed with core areas of tiger reserves, few understand the fact that the problem of unsustainable tourism is actually much more acute in the buffer zones that include dispersal areas and corridors. In buffers, mass tourism is engulfing the very resources on which it depends; and this needs to be rectified with immediate priority. Here are some steps that may help in achieving this goal:

1. It is a grave misunderstanding that our wildlife can be protected in perpetuity by locking them within PAs. They have their ecological and biological needs, and many large mammals need vast landscapes to operate and exchange genes. Based on scientific studies, managers must identify the crucial dispersal areas and movement corridors outside the core zone. Such areas should be notified by the government as 'No Development Zone' for construction of hotels, *dhabas*, shops, new highways, factories etc. Only essential small scale development such as schools, dispensaries, *aanganwadis* and small low impact non-polluting businesses may be permitted for the benefit of the villagers in these zones.
2. Once these areas are notified, the government should determine the maximum number of hotels and small eateries that would be allowed in the remaining area within a radius of 10 kms.
3. Grant of permission for any large scale tourism development or industrial

development in areas outside no construction zone must be preceded by Environmental Impact Assessment (EIA) and Social Impact Assessment. And based on the findings of such studies a fixed number of hotels and lodges may be permitted.

4. Hotels and small eateries (dhabas) that are already operating within the area notified as 'no development zone' (dispersal areas and corridors) may be given reasonable time to make modifications to ensure minimum use of fossil fuel and firewood, maximum use of bio-gas and solar energy, recycling of waste water, proper disposal of solid wastes (tins, plastics and glass must be disposed off in an incinerator or sent to recycling plants elsewhere), and minimization of noise and powerful lights at night.

5. A no fence policy, except for the human dwellings, must be made mandatory for the existing hotels in this zone.

6. Standards for building design, energy conservation, water harvesting, recycling of grey water, appropriate disposal of solid and green waste, reducing emissions for hotels, resorts, forest rest houses and eateries within and outside PAs should be set and enforced. To ensure structures are built according to environment friendly design, regulatory guidelines must be notified. Legal instruments to enforce sustainability in the immediate vicinity of protected areas should be put in place.

7. Use of firewood by hotels and resorts for any purpose other than small campfires should be completely banned. The firewood

for campfires too must be compulsorily procured only from forest depots.

8. There needs to be a framework and set of regulations for tripartite agreement between the hoteliers, local community and PA managers to ensure augmentation of local economy, job generation and direct employment.

9. A system of incentives must also be developed to reward those who have shown evidence of good practices consistently.

Suggestions for revamping tourism management:

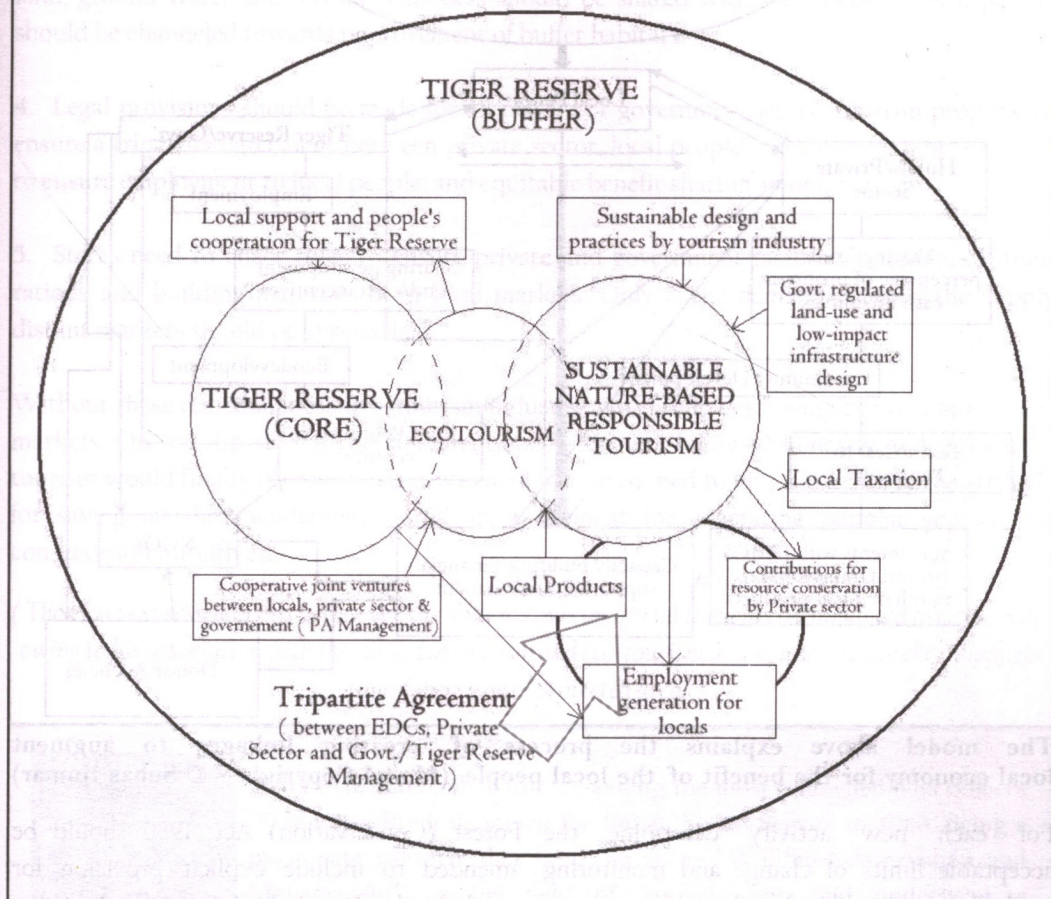
1. Revise tourism management plans of PA's to make them action oriented over prescribed time frames; at present objectives mentioned in management plans look like policy guidelines.

2. Provide a separate contingent of skilled contractual workforce to manage tourism in popular tiger reserves and PAs.

3. Develop appropriate mechanism to monitor populations, habitat conditions and adverse impacts of tourism development and visitor activities within core and buffer.

4. Mechanisms need to be developed to use tourism in PA as a supplemental tool for sustainable development by giving local people direct stakes in tourism enterprises and by giving Eco-Development Committees a share of earnings from tourism. Some tiger reserves in Madhya Pradesh are doing this by transferring a portion of the development fund (Vikas Nidhi of PAs created from tourism fees).

DESIRED MOSAIC OF NATURE-BASED TOURISM IN TIGER RESERVES

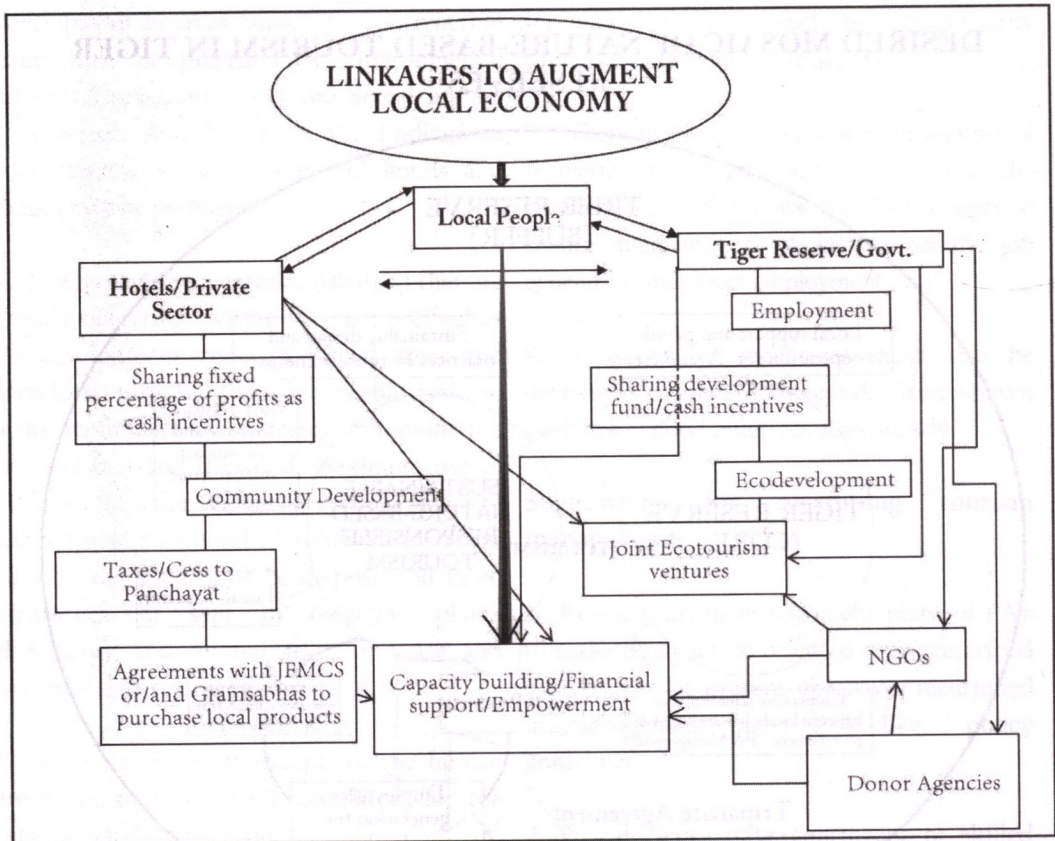


The model above explains the interventions that must be developed to streamline wildlife tourism in and around the tiger reserves. (Model Copyright - © Suhas Kumar)

Moreover, mechanisms need to be developed to mobilize finances and provide skills for empowering EDCs to take up joint community based ecotourism ventures including village home-stays in the buffer. The scope of park interpretation programmes needs to include local people, especially village children and offer them opportunity to visit the protected area free of cost so that they view the forests with a new perspective.

5. Provide resources and skills to territorial division forest managers to secure corridors, and to protect the tiger and its prey within their respective territorial jurisdictions.

6. Start new activities for tourists (trekking, camping, boating, rafting and so on) only after identifying suitable areas. Suitability maybe determined by identifying disturbances, threats, visitor safety and managerial capacity.



The model above explains the process of creating linkages to augment local economy for the benefit of the local people. (Model Copyright - © Suhas Kumar)

For each new activity determine the acceptable limits of change and monitoring methodology should be laid down.

7. Include small scale infrastructure development for ecotourism as one of the forestry activity in the Forest (Conservation) Act and prescribe criteria standards for location, design and environmental safeguards.

Required Legislative Changes to ensure flow of benefits to the locals and augmentation of the local economy

1. The Wildlife (Protection) Act, 1972 and

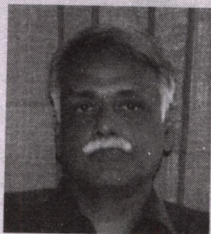
Forest (Conservation) Act, 1980 should be amended to include explicit provision for regulating land use in buffer areas and making EIA mandatory for all resource degrading, commercial infrastructure projects (mining, quarrying, industries, hotels, resorts, etc.)

2. The Environment (Protection) Act, 1986, Madhya Pradesh Panchayat Raj and Gram Swaraj Adhiniyam, 2001 should be amended and the Sarai Act, 1867 should be overhauled to include provision for enforcing ban on commercial constructions in important wildlife areas and corridors, and also to set standards for design and recycling of waste.

3. The Panchayat Raj Act should be amended to empower Gram Sabha to levy an environmental cess on hotels and resorts that are using local resources such as agricultural land, ground water and forests. This cess should be shared with local people and a part of should be channeled towards improvement of buffer habitats.
4. Legal provisions should be made for all private or government led ecotourism projects, to ensure a tripartite agreement between private sector, local people and the government agency to ensure employment to local people, and equitable benefit sharing among partners.
5. States need to enact rules to ensure private and government facilities purchase all their rations and building materials from local markets. Only if the demand exceeds the supply distant markets should be approached.

Without these remedial measures, tourism industry will end up destroying the very resource it markets. On the flip side, if the aforementioned steps are followed honestly and in earnest, tourism would finally become what it was actually envisioned to be – a partner in the struggle for saving our last wildernesses, and an instrument for generating popular support for conservation initiatives.

(The views expressed in this article are the author's own unofficial thoughts accumulated over the years owing to his association with the subject of tourism and eco-tourism as a teacher, researcher, manager and supervisor of protected areas)

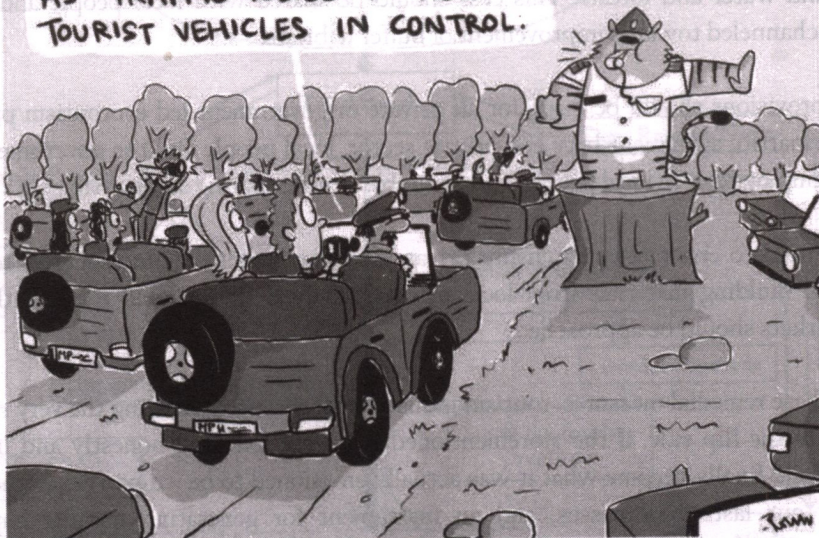


Suhas Kumar: Suhas Kumar, among the most renowned field officers of Madhya Pradesh, joined the Indian Forest Service in 1980. Being a passionate wildlifer that he is, he chose "Wildlife Conservation and Management" as his field of specialization and underwent a postgraduate diploma course at the Wildlife Institute of India (WII) in 1984. He then served as the Field Director of the then newly

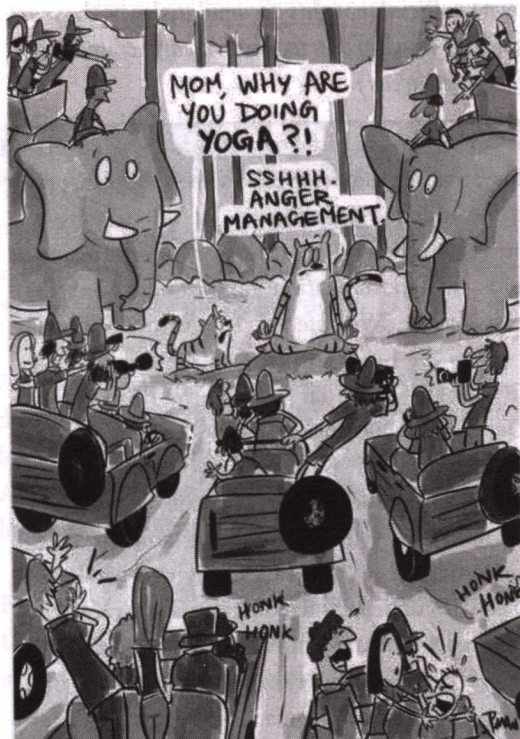
constituted Pench National Park for the next five years. His stellar work at the PA laid the foundations for Pench's future success. From December 1990 to April 1996 he headed the extension faculty of WII, organising wildlife conservation awareness programmes for various target groups. On his return to Madhya Pradesh in 1996, he served as Conservator of Forest (Wildlife) at Bhopal for next five years, overseeing and guiding the management of 11 national parks and 35 sanctuaries of the then undivided Madhya Pradesh. He has toured USA, UK and Australia to understand conservation practices implemented there and the salient features that India can learn from these countries. This brilliant officer has also authored a book for the forest guides working in various PAs of Madhya Pradesh, and has written several papers, articles and poems (most of which are available in the public domain at www.scribd.com). Currently he is the APCCF (Wildlife), Madhya Pradesh. He can be contacted on his email id : sukum48@rediffmail.com



OUR TIGERS WORK PART TIME
AS TRAFFIC POLICE TO KEEP
TOURIST VEHICLES IN CONTROL.



Traffic Trouble!



Somewhere in Central India...you
know where.

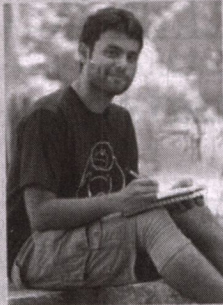
SO, WHICH SIDE ARE YOU ON
IN THIS 'TOURISM VERSUS
CONSERVATION' DEBATE?



THE RECEIVING
END.



Let me simplify the issue a bit.



Rohan Chakravarty: Rohan Chakravarty is a cartoonist, illustrator and animation designer, hailing from Nagpur. A memorable encounter with a bathing tigress in Nagzira Wildlife Sanctuary triggered his passion for the natural world, and since then his cartoons have been speaking about wild animals and nature conservation. Rohan's cartoons have been published in several magazines and journals and he has held two exhibitions of the same. He was awarded the first prize for his work in UNDP and the

French Ministry of Foreign Affairs' event '*Cartoon Contest on Climate Change in Asia-Pacific- A People's Perspective*', held in February 2012. Rohan believes that humour is the most effective way of engaging a person and developing his/her interest in any subject, and he tries to achieve it with respect to wildlife through his cartoons. Rohan is perhaps India's only 'conservation cartoonist', and you can go through hundreds of his amusing and many-a-times hilariously poignant cartoons on www.greenhumour.blogspot.in. This incredibly talented cartoonist, and an equally passionate wildlifer, can be contacted on his email id : rohanchakcartoonist@gmail.com

THE SUSPECT KILLER

By (Late) S.P. Shahi

Editor's Note : *To maintain the sanctity of the original article, all the formattings of the original article have been retained. This policy has been followed in case of spellings and italicizations of words as well. Hence, unlike the rest of the articles in this issue, the local places and vernacular names in this piece haven't been italicized because they weren't italicized in the original version of the article.*

Abbas Mian, aged twelve years, along with his elderly uncle was returning home along a forest track through the Betla National Park. On seeing a lone elephant standing on the path, he threw himself prostrate on the ground and was crushed. His uncle ran to the nearby Forest Office – 2 miles away – and the forest staff who reached the spot within an hour of the incident, found the entrails of the unfortunate victim lying by his dead body. This was in November, 1970.

On 21st March, 1971 at 5:15 p.m. a lone elephant chased a truck for nearly a mile on the metalled road passing through the National Park and when he saw two cars parked in the compound of the Tourist Lodge, he turned his attention from the truck, lifted the two cars with his trunk and pushed them into the nearby ditch.

Nine days later, Jichhori Devi, wife of the Headman of Gari village was trampled to death while she was sleeping on a *Kurha* (local name for an improvised wooden platform) in her gram field, guarding the crop.

I decided to go to Betla on 3rd April, to destroy the beast to assuage local public's

feelings which had been considerably roused by the latest killing of the Mukhiya's (Headman) wife.

The report received was that the killer was a lone elephant roaming in the forest. As chance would have it, the D.F.O., the Game Warden and myself encountered the lone elephant at 11 o'clock in the day. The day, in April, is very hot in Palamau and the elephant to avoid the midday heat had taken shelter in a bamboo forest. The Indian elephant, unlike its African relative, avoids the direct rays of the sun.

Elephants make a peculiar sound to intimidate an intruder by rapping the end of the trunk smartly on the ground, (as seen in the photograph) and emitting air through the tip of the trunk. This is what the lone elephant did after seeing us.

It was the Game Warden who first noticed the "must" flowing from the temple, on each side of the head.

With the recent killings of two persons and overturning of cars parked in an habited locality, fresh in my mind, I was momentarily petrified. A charging elephant spreads his ears,

raises his trunk and straightens the tail. This elephant which was a Makna (a tuskless male), did nothing of this sort. He however, swiftly came on to the road and followed the jeep. We had earlier taken the precaution of turning the jeep so that it faced away from him. He would move fifteen to twenty feet towards the jeep and then stand still. We would also move our jeep simultaneously, an equal distance away and his still posture gave us a good opportunity to photograph him. He followed the jeep in this manner for half a furlong and then turned again into the forest and disappeared.

As is invariably the case, this Makna was well built and of good size. According to E.P.Gee, "nature has compensated Maknas for the lack of tusks. In a fight a Makna can break off one of its adversary's tusks with its trunk". This Makna fitted the description well.

Male elephants (sometimes females too) are subjected to periodical paroxysms supposed to be of a sexual nature, and an oily matter exudes from a small hole in the temple on each side of the head between the eyes and ear holes. The temple also swells. The elephants under the influence of 'must' are described as 'mad' and their behavior in such a state is unpredictable. According to Sanderson who had observed wild elephants for 13 years, fits of 'must' differ in duration in different animals. In some they last for a few weeks, in others for even four to five months. Some naturalists believe that 'must' indicates the elephant's urge to fight and even kill before mating. Our Makna did not appear that vicious.

It is remarkable how an elephant can go

unnoticed in the forests in spite of its huge size. It might be standing close to you and yet it stands so still that it is difficult to know it is there. If an elephant feels that it has not been seen by man, it moves away without the slightest sound even in dense forests. When disturbed by man, it usually crashes through the forest undergrowth knocking down trees and occasionally trumpeting shrilly. This Makna did not charge as we feared he would nor did he crash into the forests breaking tree and branches in the process – probably the peak of his 'must' was over. It is likely he had overturned the two cars and killed the two persons when he was at the height of his 'must'. These two incidents had occurred within ten days of each other.

Besides the lone bull, there were in the National Park at this time two elephant herds – one of five, consisting of 3 full grown cows and their 2 less than a year old calves; the other of four, 2 males and 2 young cows. We watched these two herds closely. None of them were in 'must'. Only one bull had been wandering about in the forest alone and this was our Makna, in 'must'. Probably a 'must' elephant leaves the herd and prefers to lead a solitary existence during this period.

Although there was strong suspicion that this Makna in 'must' was the killer of the lady and the young boy, and was also responsible for the overturning of two cars, the conscious opinion among us was to give him the benefit of doubt. No one had cared to see that the elephant that had chased the truck and had tried to settle issues with the two cars was in

'must'.



S.P. Shahi

S.P. Shahi

S.P. Shahi

Above: The "Suspect Killer" — The 'Makna' elephant in Betla National Park. 'Must' fluid can be clearly seen oozing out of the temple of this elephant.

Below: Mangled remains of the two cars that bore the brunt of this Makna's anger.

Editor's Note : The above photographs have been sourced from *Backs to the Wall : Saga of Wildlife in Bihar* (East-West Press, 1977) by S.P. Shahi and aren't the exact photographs that appeared in the original article. The accompanying captions too have been composed by us for this issue.

Even elephants not in 'must' behave erratically at times. Lydekker mentions of an instance of a wild elephant trying conclusions with a railway train. The dual occurred in broad day-light in the Malaya Peninsula and the elephant was "the deliberate aggressor". The engine-driver, seeing a big tusker on the railway track had brought the train to a standstill, whereupon the tusker encouraged by his enemy's unwillingness to attack, took the offensive and charged bravely, so bravely that he broke his tusks to pieces and injured his head. For over an hour, the elephant held the position, charging repeatedly. After he had battered his head, he turned his hind-quarters to the engine and tried to overturn it.

Lydekker mentions of another instance in Bihar, on the night of September 28, 1882, when a train of the Bengal-Nagpur Railway (now South-eastern Railway), while travelling at a speed of 30 miles an hour collided with an elephant between Goilkera and Manoharpur. Not much is known as to why this happened. Very recently on 19.12.71 at about 22:00 hours, the engine-driver of the Rourkela-Howrah Down Express, saw an elephant standing by the side of the railway track from a distance of some 50 yards. He pulled the whistle and tried to stop the engine but as the train was in speed he could not do so. The elephant which normally senses danger very effectively, came right on to the track, was dragged about 100 yards and was killed. This happened in the same forest area as the one described by Lydekker, some ninety years earlier. While Lydekker's elephant's tusks measured 72", the one recently killed measured a mere 32". It could be a young bull

or very likely there has been a degeneration in the race, like in Africa. The elephant's behavior at times is extremely unpredictable.

An enquiry into the car incident revealed that the truck had suddenly met the lone bull near a bend on the metalled road and had dashed into him. This may have enraged the bull, who chased the truck for nearly a mile and seeing the 2 cars parked in the Tourist lodge compound had thrown them into the ditch. Such behavior, though unusual, is possible with wild elephants.

Apart from the killing incidences described above, a herd of elephant had trampled to death another five persons in a neighboring forest division, in the same season last year. Investigation showed that the villagers had fired country-made guns and thrown crackers at them. This had irritated the herd which took its toll. By intensive propaganda the villagers were educated into seeing the folly of their own actions and no casualty has occurred this season. Left to itself, an elephant is a genuine non-aggressor and except showing its annoyance by knocking down trees, drawing in or emitting air from his trunk, means no harm.

While our Makna in 'must' was the only solitary bull roaming in the forest and circumstantial evidence was that he was the killer, we could not condemn him for murder without positive proof, and such proof was lacking. Many wild animals particularly tigers have been shot on the mere suspicion being killers of men and destroyer of crops, without even a *prima facie* enquiry.



S.P. Shahi (1917-1986) : One of erstwhile-undivided Bihar's best known wildlifers, and surely among the best forest officers India has ever known, the legendary S.P. Shahi was a true 'wildlife hero'. He joined the Bihar Forest Department in 1942 as the Timber Supply Officer. In those days, over two-thirds of Bihar's forests were privately owned. Once India achieved independence, the State Government took over their management through the Bihar Private Forest Act, 1947. S.P. Shahi was drafted along with other young officers to stop

the large scale destruction of these *Zamindari forests* by their owners, who refused to accept the new legislation. His outstanding work in this assignment was awarded by giving him an out-of-turn promotion to a higher rank. He never looked back after that, and retired from the service in 1975 after having become the Chief Conservator of Forests at the age of 43 in 1960 — the youngest in the country.

S.P. Shahi's foresight is perhaps best illustrated by the fact that he ordered the cancellation of all shooting blocks in Bihar in 1968, two years before the Government of India enforced a nationwide ban on hunting in 1970. He became an extremely passionate wildlife photographer in the last years of his service and post-retirement, and would spend nights after nights in hide-outs and *machans* in various forests of Bihar trying to photograph the elusive tigers, leopards and other wildlife of his state. Some of his images, such as his widely acclaimed iconic photographs of the little-known wolves of the *Mahuadanr* valley in Palamu, are to this day the only photographic records of the species from the state. He was a prolific writer too, and his book *Backs to the Wall : Saga of Wildlife in Bihar* is still the only book ever written on the wildlife of present day Bihar and Jharkhand, and the most comprehensive record of the status of the wildlife of this land more than 40 years ago. He also authored several articles and papers during his time, many of which were published in *Cheetal*. Infact he had a very intimate relationship with *Cheetal* and WPSI. A Life Member of the organisation, he, just like his other illustrious colleagues viz. Kailash Sankhala, S.R. Choudhury, J.P. Sinha et. al., would regularly write articles for the journal and was very proactive in expanding the organisation's outreach. He even started the Bihar state chapter of WPSI, and served as its President. Alas, with his sad demise in 1986, the state chapter too became defunct and died out.

Even though today the man and his innumerable contributions towards saving India's wilds have sadly been forgotten by most, his legacy lives on in the form of his writings and his photographs, and most importantly in the form of all the PAs of Jharkhand & Bihar, almost all of which were notified during his tenure as undivided Bihar's Chief Wildlife Warden. *Cheetal* and WPSI shall always remember the great *Shahi Sahab*, as he was fondly referred to, and we will make sure that his memory lives on through his various writings in *Cheetal* which we will keep republishing in future.

CONSERVATION WITHIN CAGES

By Vinod Rishi



There are very few conservation issues that divide the clique of conservationists as sharply as the significance – or insignificance, depending upon which group one belongs to – of Zoological Gardens. I – having served a good part of my career in the Indian Forest Services as the Director of the *Padmaja Naidu Himalayan Zoological Park*, Darjeeling – belong to that fast diminishing ilk of conservationists who believe that well-managed zoos are not only vital, they actually hold significant potential for conservation of endangered species. To elucidate why I have steadfastly held on to this stand of mine for the past three decades, I will briefly narrate my case-studies of two species endangered in the wild – the Snow Leopard and the Red Panda.

The Snow Leopard (*Panthera uncia*) is perhaps the world's rarest and most elusive big-cat.

With a global population of just 4000-6000 individuals as per IUCN estimates, the secretive phantom of the snows is critically endangered in India. Rough estimates peg their population in the Indian Himalayas somewhere between 400 to 600 individuals. Poaching – be it revenge-killing of a livestock killer or hunting for trade in its skin and body parts – is the main threat to the Snow Leopard's survival in the wild. A fast depleting prey-base doesn't help their cause much either, and is another major problem responsible for the global decline of Snow Leopard populations. Both these threats are even more severe because of weak law enforcement in the mountainous terrains that these big-cats inhabit.

Field research on Snow Leopards has not gone beyond indicating their population-status

in the studied areas and the conservation-problems the species is faced with. In fact, such preliminary findings have mostly simply reiterated the information that was already available in the old literatures on the fauna of the Himalayas; and nothing much significant has been added to it. As a result the conservation of Snow Leopard is limited to stereo-typed proposals for launching "Projects" in the name of the species, while research on the ecology and ethology of wild Snow Leopards – critical for their management in the wild – still remains in its infancy.

CONSERVATION BREEDING OF SNOW LEOPARDS AT DARJEELING ZOO

While field studies and conditions haven't added much towards effective conservation of the Snow Leopards in the wild, conservation breeding in captivity came up as a strong alternative to ensure the conservation of a genetically pure stock. We learned its importance at the Padmaja Naidu Himalayan Zoological Park, (PNHZP), at Darjeeling; popularly called the *Darjeeling Zoo*. The Zoological Park had initiated a 'Conservation Breeding Program' for the Snow Leopards with the help of the *International Snow Leopard Trust* (ISLT) in 1983.

The Snow Leopard is known to be a difficult breeder. ISLT records showed that the first success in Asia came to China in 1984, after 35 years of trials in captivity in many zoos of the country. The first pair of Snow Leopards brought to the Darjeeling zoo in 1986 had failed to bear the desired results. As a part of the program a new pair of Snow Leopards, Hank and Persia, was brought to the zoo in

January 1989.

Hank was a 3 year old male, and Persia, the female, was 8 when they arrived at Darjeeling. The two were complete strangers to each other. Snow Leopards do not readily accept others as mating partners. They are also extremely sensitive to abrupt changes in their environments, handlers, food, and the type and system of care given to them. The Snow Leopard Trust had told us not to worry if it takes 4 or 5 months for them to adjust themselves to Darjeeling and accept each other as mates.

Darjeeling, with an average altitude of about 7,000 ft above the mean sea level (m.s.l.), does not fall in the natural range of Snow Leopard. The Snow Leopard in the Himalayas lives at an altitude ranging between 12,000 feet to 14,500 feet above the m.s.l. Darjeeling has moist temperate climate; while Snow Leopard prefer dry, cold, snowbound wilderness. We were helpless about the environmental conditions, but we hoped that like the older pair of Snow Leopards the new ones also would eventually adjust to the natural environment of Darjeeling in a few months.

Yet we were worried. When they arrived, half the breeding season for the Snow Leopard was already over. If we missed the season, we would never know what had gone wrong and how to manage the program with them. We could do nothing about the climate, so we concentrated instead on managing their acceptance of the new accommodation and enclosures, faces and voices of their attendants, plus the sounds and smells around them. Even the kind of feed they were

provided were different from what they were used to in their previous stations. Persia seemed to have a streak of adventure in her, and was ready to adapt to the new place; but Hank was clearly under great stress. He was scared of everything – the enclosure, the people around him, and even the presence of Persia, who he was supposed to be paired with.

Both were from the zoos in U.S.A., and were used to english speaking, fair skinned keepers. In order to make them comfortable with their new keepers, Kiran Moktan, the tall fair and handsome english speaking supervisor of the *Snow Leopard Breeding Centre*, worked away their nervousness by calling out Hank and Persia by name, making small talk in english, and luring them with small pieces of meat dipped in milk and *complan* to come together. After a few attempts Persia accepted Kiran. Hank was a little difficult to manage and took a little longer to adjust to his advances. Once Kiran was accepted by both, other keepers were also introduced to them.

While the above hurdle was now out of the way, getting Hank and Persia used to their accommodation and enclosures was still proving to be a difficult proposition. To solve this quandary, we felt that the first Snow Leopard pair of the zoo, *Visna* and *Kashi*, who had arrived in 1986, could be of some help. There were two rows of four interconnected rooms in the Snow Leopard house. Each Snow Leopard was lodged in a set of two adjacent rooms: Hank and Persia in one row; and *Visna* and *Kashi* in the facing row of rooms. In order to understand their comfort levels, they were placed such that the Snow Leopards of

opposite sex were lodged in rooms facing each other. *Visna* and *Kashi* showed interest in the new comers. Persia 'spoke' to *Visna*, the male, by a rasping purr known as 'prusten', but received no response. *Kashi* wanted to play with the new comers; but Hank was absolutely uncomfortable with all the three.

Hank, the prospective bride-groom, was extremely nervous of Persia's presence; he would cower and steal back into his box the moment he saw Persia. Hank was supposed to pair with Persia, and the breeding program would not succeed if he did not tow a softer line. And so we decided on making a special effort in this regard.

THE ROLE OF SCENT MARKING IN BREEDING BEHAVIOR OF SNOW LEOPARDS

We had been maintaining a field observation diary recording the behavior of *Visna* and *Kashi* for over a year, and had also started similar observation records for Persia and Hank since 28.1.1989, the day they had arrived at Darjeeling. The analyses of our records gave me a clue which we applied to resolve the situation. The clue was the fact that the role of scent marking by big cats is more significant for inducing breeding conditions than for territory marking. Had it been mainly for territory marking, the act of scent marking should have continued throughout the year, which it did not. When a male or a female cat marks any object with its urine-borne pheromones, the action of smelling the spot by an individual of the opposite sex makes the latter also to start marking the spots. Within

a week or a few days, the frequency of marking increases to a peak and subsides, and after a brief break the marking cycle resumes again. When the peaks reached by the two individuals of opposite sex come very close, they mate.

I used this clue by initiating the process of removing the fear of Persia from Hank's mind. It was started by calling Hank out for his morning cup of complan before Persia was called out. The lure of complan made Hank stay on till he finished it, even after Persia had arrived in the adjacent room for her cup of the drink. Initially, he would not look at Persia, but within a few days he started tolerating her stares, and then her proximity in the next room. He was then permitted access to Persia's room for a few minutes in her absence when she was released for her morning walk in the open enclosure outside their rooms. While Hank started getting used to Persia's body scent in her room, Persia was moving about and marking spots in the open enclosure outside their rooms. Hank was brought back to his room before Persia returned to hers. Hank was then let out in the open enclosure to roam about, and as we had expected, he was seen sniffing at the spots marked by Persia. In a few days Hank also started marking spots with his scent.

Within a few weeks, to our great joy, the two finally started mating. Persia mated with Hank from 10.2.1989 to 13.2.1989; and on 20.5.1989, which happened to be *Buddha Poornima*, she delivered her litter of two female cubs, *Usha* and *Poornima*. Hank and Persia had made their invaluable contribution to the first ever record of successful

breeding of Snow Leopards in captivity in South-east Asia – at the Padmaja Naidu Himalayan Zoological Park, Darjeeling.

But our gain was not limited to the breeding of Snow Leopards; we benefited from working for them in captivity at Darjeeling as new information about their secretive lives started getting revealed from the diaries we were maintaining on their behavior. They yielded information that cannot be collected in the field: for instance, the different calls the Snow Leopards make; the condition of the cubs at birth; the number of days it takes for the eyes of the cubs to open after birth; the maternal instinct in selection of breeding den; the role of both parents in bringing up the cubs; and many other similar secrets that field biologists studying Snow Leopards in natural conditions cannot access. Being physiological and instinctive in origin, such behavior was not affected by keeping them in the zoo.

RED PANDA CONSERVATION BREEDING AND RELEASE IN THE WILD

In 1990, after the success with the Snow Leopards I planned the conservation of the Red Panda as our next project for the zoo; this time with the idea to demonstrate how conservation breeding in a zoo can contribute to restocking rare and endangered species in the wild. With initial studies carried out by Sunita Pradhan, a young dedicated student scientist from the college at Darjeeling, a project was launched before I left the zoo in 1992. It was taken up and managed with all sincerity and scientific approach by a succession of Directors of the zoo who came after me. The zoo not only succeeded in

breeding a good stock of Red Pandas, but also in their successful release and reintroduction in their natural habitat – the forests of *Singalia Range* of West Bengal Himalayas, in 2003. The crucial information that was responsible for this successful release came from the studies carried out in the zoo. The information from field studies till then had been wholly inadequate to develop conservation management techniques for the species.



Red Pandas at the Darjeeling Zoo

IMPORTANCE OF ZOO STUDIES IN WILDLIFE CONSERVATION

The examples of managing the breeding behavior of Snow Leopards, and the conservation of Red Panda by breeding them in Darjeeling Zoo, and releasing them in the wild, are only two examples among many throughout the world that are illustrative of the importance of undertaking scientific studies of endangered or vulnerable species, in zoos. The success story of the Pygmy Hog's revival in the flood plains of Assam through captive breeding, and the continuous restocking of Chambal and a few other rivers of India with the critically endangered Gharial are two other well-known examples that further reinforce the validity of the above statement. But while having various conservation dialogues, this potential of zoos to provide knowledge that is difficult to collect with confidence in the wild, and as an important tool for revival of wild populations of species that are on the brink of extinction, has always been under-rated and conveniently neglected. In general, the critics still believe

that the environment in zoos affect the biology of the captive animal. I differ to the extent that physiology, anatomy and instinct are the creations of genetic build-up of a species; these aspects are not changeable. In the case of the Snow Leopards, the role of scent marking in breeding behavior remained unchanged; the motherly instinct to take care of the new born cubs was also unaffected by life in captivity. The success of Red Panda Project also depended on the studies made in the zoo. In both the cases the field studies could not have provided the information needed for the management and conservation of these endangered species.

Another argument usually put across by those who oppose zoos is that keeping an animal captive in zoos serves no purpose other than their cheap exhibition to obtuse crowds. While I agree that there are a number of poorly managed zoos that need to realize the gain they would make by reorienting their approach from entertainment to conservation, even such critics conveniently and selectively choose to ignore the conservation potentials

of well-managed zoos. Of course, the key word here is "well-managed", for poorly-managed zoos can never actualize the conservation potential they withhold and become nothing more than a menagerie for cheap entertainment.

I believe that zoo studies compliment studies carried out in the field by providing scientific information on aspects of the species' biology that cannot be observed and recorded from the field efficiently. But the value of observations made in the zoos or in the field depends upon the scientific temperament of the observer. Knowledge from the field studies and from controlled environment in captivity is, still, knowledge; nothing goes waste. It is for the seeker of knowledge to sift the information required for application in the conservation of rare and endangered species of wildlife.

We have to review our approach towards biological research on endangered species of wildlife. The importance of well-managed zoos as units for carrying out research on certain aspects of biology and management of rare and endangered species of wildlife has to be recognized by scientific institutions. They will have to review their policy on wildlife research and bring to an end their tendency of treating zoos as pariahs for sending their students for scientific research work on animal biology.

(The views expressed in this article are the author's own)



Vinod Rishi: One of India's most celebrated forest officers, Vinod Rishi joined the Indian Forest Service in 1969. He was always a very bright student, and completed his B.Tech from IIT Delhi in 1968. A gifted naturalist, there are very few individuals in India who know the field craft as well he does. He has held so many varied and critical posts that it is really difficult to list all of them here due to space constraints. He has served as the Director of the Darjeeling Zoo ; Director, Project Elephant ; Member Secretary, National Board of Wildlife ; and Additional Director General of Forests (Wildlife), Govt. of India to name a few. He did outstanding work in each of his postings, and the wildlife in areas under his jurisdiction thrived as long as he was incharge. Over the years, he has headed and participated in hundreds of government committees on wildlife and forest conservation, and has been a tireless voice for the protection of India's wild denizens in each of these committees. He is also an incredible artist who sketches and paints with great skill, and a musician too who loves to play his piano-accordion. Vinod Rishi retired from the services as the ADG (Wildlife) in 2006, and now lives in Dehradun. He can be contacted on his email id : vinodrishi@rediffmail.com

THE STING

By S.E.H. Kazmi

Editor's Note : This article was first published in WII Newsletter, Volume 3, 1996. These old WII newsletters have not been digitized, and there are very few hardcopies of such old newsletters left. Cheetal has a long-standing policy of only publishing original content which hasn't been published elsewhere ; but since the content of this article was extremely inspiring and relevant, and finding hardcopies of the original newsletter is next to impossible, so making an exception to our rule, we decided to republish this article in our journal.

Who has not heard of poaching in Protected Areas? Our newspapers and magazines are full of stories of “ shot Tigers and poisoned Leopards ”. So what is new? But listen, there is something new. Let me narrate the whole story.

Oh, I have forgotten to introduce myself. I am Kazmi, working as D.F.O., Territorial Division, Daltonganj, Bihar. My jurisdiction includes about 500 sq.kms of buffer area of Palamu Tiger Reserve. It is almost five years when they posted me here and forgot. And this serves me right, for I had requested people, begged them and even threatened a few, and finally bulldozed my way for this particular posting.

Long tenures at a place have got their own advantages and disadvantages, may be more advantages. Local people come to know you and can predict your response with a fair degree of accuracy, and one also develops a sort of reputation. But again, this is not the main theme of my story.

Now, I begin. It was the third week of February, 1995. I had gone on tour and when I returned in the evening, my wife told me that Gangeshwar Singh, a small time local political leader, was searching for me frantically. He had waited for me the whole day. Ultimately he had left with a message, that a white ambassador car had entered the forest and its occupants belonging to his political party were trying to smuggle ivory. He had given the car's number as well. Next day, I went to meet Gangeshwar Singh who lived in a village named Kechki, situated at a distance of about 20kms from Daltonganj. He told me the details – a splinter group of his political party was trying to raise money by smuggling ivory that was lying with some Oraon Tribal of Serendag village. The money obtained from the sale of the ivory would be used to finance the election campaign of his rivals. But he being a “friend” of mine thought it was better to inform me. I took him along and tried to enquire at the various forest check-posts. Yes, a white ambassador car had entered the

forests with 5-6 persons. It had stayed in Bere village for the night and had returned early in the morning. The ostensible purpose of the visit mentioned in the Naka register was political campaigning. According to records, nothing incriminating was found in the car. But I was worried, and my "friend" could see it on my face. He enquired very discreetly if it was my job to catch poachers; I said yes, but why did he ask that? He wondered and said that the general impression in the area was that if trees were felled then the DFO should be informed and poaching/hunting was Project Tiger's business. I told him clearly that whatever happens in the forest was my business and he must inform me about the activities of his "friends".

He was silent for a long time and didn't commit to anything. After some time, he asked me if I was ready to hear the truth, and after hearing it, was I ready to act accordingly? I said yes. Then he told me three points. First, there is regular poaching in the forest. Furthermore, there is an organised network of poachers/dealers which collects the wildlife products and sends them outside, maybe abroad too. Moreover, these people were very dangerous and messing with them was very risky.

I said that I was ready to act. He said that he would let me know, if something turns up. I returned to Daltonganj, more worried, and a bit excited in anticipation of some action.

Maybe after a week or so, he turned up again at my residence – all smiles! I looked

at him questioningly. He said that one Sita Ram, resident of Semarburhani village, Mahuadanr block, an old timer in the business had acquired a few skins and ivory and was looking for a suitable buyer. Does it interest me? I said yes. And so we sat down to plan the operation. We decided that he would act as a middleman and try to purchase the material on behalf of a buyer from Calcutta, and when the material came in our possession, we would arrest the poacher and then try to know, who did what, when and where. I gave him some money to be given as an advance to the poacher/dealer.

Gangeshwar Singh returned after 3-4 days, and told me that the deal had been struck and he would keep me informed with further developments. Oh, I forgot to mention that this time around, he had brought another gentleman along with him, who was introduced to me as his contact to M/s Sita Ram Sao & Co. The newcomer was visibly very nervous. His name was Satyendra. They promised to return soon.

The duo did return soon – next morning, rather too soon by the prevailing standards in the forest areas. Worry and anxiety was written in bold letters on their faces. I asked them the reason behind their anxiety. They explained that they had told Sita Ram that the Calcutta 'party' had arrived and was demanding "maal", but instead of handing over the skins to them, Sita Ram had come with them and was insisting upon meeting the party personally. What to do now? It was my turn to worry. How to arrange for "the party" at such a short notice? They said

that Sita Ram and his friends are waiting at a *Chai* shop in the *bazaar*.

We needed to think quick now. There was no time to arrange for a "party". I asked them if they could introduce me as "the party"? Wouldn't it work? They gave me a careful look, looked at each other knowingly and passed the judgement - it may work or it may not. I said - "*Thank you, I know that! Now from this moment, I am your party, so kindly take me to the poachers*". I said that the meeting place would be a local hotel, and asked them to bring their associates after an hour and ask for Mr. S. Mukherjee of Calcutta, and then we would talk to the poachers in the hotel-room.

I checked in a local hotel. They gave me a room which was dark and dirty. Due to the rather "busy" morning I had, I didn't get time to take a bath or shave; and so I am pretty sure I was matching with the surroundings. Although I am not a habitual smoker but that morning I bought a packet of Wills and started smoking in the room - partly to cover my face and partly to soothe my nerves. I looked in the mirror, I was satisfied with my appearance and prepared myself for the "meeting", this time, for a change, with poachers.

After an hour or so, Gangeshwar Singh returned with two persons. I was introduced as Mr. S. Mukherjee of Calcutta, representing a cartel of international smugglers, with "*branches in America and Canada*". The poachers were introduced to me as Sita Ram Sao and his nephew Lalit of Semarburhani village, Mahudanr Block, old

timers in the business who could provide anything that I demand provided the price was right. The poachers said that they were interested in a long term partnership. I think, I should mention here that I was speaking through an interpreter - the role being played by Gangeshwar Singh. I pretended that I didn't know much Hindi.

After the brief introductions, we started talking business. To convince the poachers about my profession as a trader/purchaser of wildlife products, I had taken along the *Book of Indian Animals* by S.H. Prater with me. I had written certain amounts below the photographs or sketches of the animals. I started showing them the photographs and they started quoting their prices for that particular animal. I must admit that they were quite honest in the sense that they didn't quote any price for the skins of the animals that were not found in my area. They would simply say "*Yahaan nahin paaya jaata hai*" or "*Yahaan nahin milta hai*".

Sita Ram demanded Rs 16000 for an 11 feet Tiger skin, Rs 6000 each for two Leopard skins and ivory at the rates of Rs. 5000 per kg. I offered Rs. 12000 for the Tiger skin, Rs 3000 each for the Leopard skins, and Rs 2000 per kg for ivory. I specifically enquired about the rate of Tiger bones. They told me that they could provide Tiger bones also at the rate of Rs. 100 per kg. The Tiger bones would be given in either powdered form or in very small pieces, they said. When I demanded a complete Tiger skeleton, they told me that it was not possible because of the risk of detection during transportation. They said that they had supplied Tiger

bones in powder form earlier too. The terms of payment were discussed in detail. They said that they would take half of the agreed price in advance and half at the time of the delivery. I told them that I would decide about the final price only after seeing the material from the forest near Semarburhani village. After haggling over the prices, I gave them some money in advance. They asked me to collect the material from the Mahuadnar-Semarburhni road at 8 p.m., the next day. Gangeshwar Singh would act as my guide.

After having breakfast they shook my hands profusely, and then all of them left the room with a promise to meet me the next day. I waited in the room for about an hour or so, and then returned back home.

I narrated the whole story to the Deputy Commissioner and requested him for the services of his bodyguard to accompany me during the trip. After giving me the usual advises, he agreed to give me his bodyguard Javed Khan.

Next day I hired a white Maruti Van, collected Gangeshwar Singh from his village and reached the rendezvous at 8 p.m. There was absolute calm. About 5-10 minutes later, two persons emerged from the nearby bushes. After our proper identifications they uncovered their faces. They were Sita Ram and Lalit. We got out of the car.

The duo were carrying a gunny bag and they pulled out 2 Leopard skins from the bag and spread them out on the ground. In the bright moonlight I could see that one skin

had bullet marks and was quite fresh. The other skin was slightly old. I pretended to examine the skins carefully as a real purchaser would do. They were more than 6 ft long. Believe me, it gave me an eerie feeling when I touched the soft fur with my cold fingers. All the images of Leopards I had seen during last 4-5 years – bounding, jumping, crouching or just sitting proudly flashed through my mind. Which one were these? Had I seen them before? I felt as if both the Leopards were laughing at me, ridiculing me, asking questions which I never bothered to ask myself. I felt mad with rage.

I enquired about the Tiger skin and ivory. They said that their man had gone to collect that from a distant village and should return any moment. They requested me to wait at their house and avail their hospitality. I refused. After waiting for about an hour or so, I decided to leave. They asked me to carry the Leopard skins to which I replied that I would collect it with the rest of the material i.e. the Tiger skin and the ivory. I promised to return next day at the same place same time. I started my journey towards home. On the way I crossed six of my forest check posts. The men on duty never bothered to make any entry in the register or check for anything. I felt sad and ashamed of myself.

After seeing and knowing about the racket, I told everything to Mr. P.K. Sen, the then Field Director who happened to be my Conservator also. He was furious and banged me left and right. I told him about my appointment with M/s Sita Ram & Co.

that night. We decided to arrest them red handed. Easier said than done. So many things could go wrong; hence it required a very careful planning. We decided that I would go alone in the car and the arresting party would follow me. We would maintain a time gap of about 10 minutes and would remain in touch through wireless. The arresting party had a lot of people and it was led by Mr. P.K. Sen, the then Field Director, Project Tiger ; P.K. Ramaiah, Deputy Commissioner, Palamu ; Uday Singh Kumawat, IAS (Prob.) ; M.P. Singh, Divisional Forest Officer, Afforestation. They had 21 CRPF commandoes, armed with automatic weapons because it was a Naxalite infested area. They would travel in the tourist bus of Project Tiger.

I, Gangeshwar Singh, and Javed Khan, the driver cum bodyguard of the District Commissioner, started our journey at about 6 p.m. in the same white Maruti Van. The arresting party followed us. We reached the place at about 8:05 pm. Nobody was in sight, but after a few minutes 4-5 persons came out of the forest and surrounded our car. They enquired who were we looking for. Gangeshwar identified himself. Soon Lalit and Sita Ram also came near the car. They told others to move away. When we were out of hearing distance, Sita Ram told me that the Tiger skin and ivory had still not come to his possession because of some operational problems, but if I give him some more time, maybe he could negotiate it at a lesser rate. I enquired about the Leopard skins which I had seen yesterday. He said that he had brought them. I told him that I had more interest in the Tiger skin and

ivory because there wasn't much profit in Leopard skins and the price was also not right, so he must return me my money. He was dismayed at the idea and said that he had already advanced the money to his suppliers and it was not possible for him to return the money. Meanwhile, I had given the wireless signal to the raiding party. A few minutes passed in haggling over the prices and future planning. By then I could see the headlights of the canter. It came with the normal speed and stopped near the van suddenly. The CRPF men jumped out of the bus and arrested everybody including myself. I can never forget the looks of the commando who covered me with his SLR. I sat very still. One wrong move from my side, and he would have shot me. Sita Ram Sao, his brother Balram Prasad and their nephew Lalit were arrested on the spot. Two Leopard skins had been seized from their possession. A Hero-Honda motorcycle was also seized from the place of arrest.

The house of the arrested persons was searched but no incriminating material was recovered from there. We were "released" at the Baresanr Forest Resthouse and everybody returned home. Gangeshwar Singh was dropped at his village.

Next day, Sita Ram, Lalit and Balram were interrogated closely. They told us what they knew - one Bengali Mr. Mukherjee of Calcutta organised the whole thing, and they got the skin from the villagers who did the actual poaching, it was their first deal, and so on and so forth.

They were sent to jail on 15th March, 1995.

They moved their bail petition on 19th March, 1995. In their defence they said that they were poor innocent villagers who had been framed by the Forest Department while the real poacher in the Maruti Van had been released by the authorities after accepting a huge amount as bribe. We also sent our side of the story to the court, but they did not believe us and released them on bail on 5th April, 1995 after 22 days.

After coming out of the jail, they vowed in public that they would kill each of those persons who had made a fool out of them. Gangeshwar Singh came to me and told me about the threat to his life. I advised him to be careful and vanish from the scene for some time. He said he was more worried about his friend Satyendra because he belongs to Semarburhani village. I said, warn him as well. He said Satyendra knows about it and carries "saamaan" with him. "Saamaan" is a country-made revolver in local parlance.

On the administrative front, I met the D.C. and S.P. and told them about the threat to my informer. I and Deputy Commissioner then met the District Judge and narrated the whole story. The district judge gave us a very patient listening, and advised us to file a review petition against the bail orders of the lower court.

Alas, M/s Sita Ram and Co. did not have much patience. They beheaded Satyendra on 17th May, 1995 at 7:30 a.m. on the same place where we did the deal. Their performance was watched by 50-60 people,

because Lalit had started chasing Satyendra from the nearby bus-stand. Yet there were no eyewitnesses.

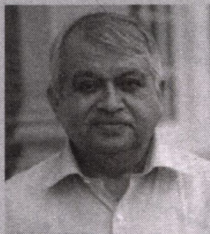
I was in a different kind of mess. Satyendra, an outcast of the family until that day, was dearly owned up by his estranged family, and they demanded Rs. 5 lakh as compensation and a government job for the brother of the deceased. Their cause was taken up by the local press and small time leaders. There were explanations to be given to the official hierarchy also. But I had covered my tracks like all of us should do in these sort of situations. Officially, I never had any informer on record because there is no provision of keeping informers in the Forest Department. There is no provision of making payments for obtaining information either. By now, I had realised how costly and dangerous this whole anti-poaching business was. Had it not been for a few of my friends and well-wishers of wildlife, the whole operation might not have succeeded.

At present, Lalit and Balram, are in jail on the charges of murder while Sita Ram is absconding – maybe waiting for a suitable opportunity to fulfil his vow.

P.S.: On the information provided by Sita Ram and Co., one *Samuel Oraon* of Kera Khar village, Mahuadanr Block, was detained and interrogated. He told us that they had gone to the forest to shoot deer and wild boar, but a Leopard came out in the "Haanka" (jungle-beat) instead. So they shot the big cat. The meat was eaten and the skin was sold to Sita Ram for Rs 1500 of which only 500 was paid to him by Sita Ram.

Sita Ram told us that the other skin was received from one Quauum Ansari of Lurghumi village of Mahuadanr block. Qauum Ansari is still absconding. Moreover, I could not take any significant action against the field staff of the concerned areas because all of them were on strike when the actual poaching took place.

(The views expressed in this article are the author's own)



S.E.H. Kazmi: A 1985 batch IFS officer, S.E.H. Kazmi has a reputation of being an upright, brave, tough, and highly efficient field officer. A thorough wildlifer at heart, he has single-handedly fought to protect some of Jharkhand's last wildernesses on numerous occasions. He is also perhaps India's only forest officer to have produced excellent results while working in the much-dreaded Naxal heartlands of east-central India (Palamu and Hazaribagh). His success working in these 'Red Lands' is attributed to his just and honest ways, which has earned him the respect of not only the locals, but that of the rebels as well. While he has enjoyed and loved all the forests he has been incharge of — be it Gautam-Buddha (in present-day Bihar) or Hazaribagh or Dalma (both in present-day Jharkhand) — it's the famed forests of Palamu that hold a special place in his heart. He has been hopelessly in love with the place ever since he first came here in 1991, and has been fighting ever since to safeguard this wild jewel. Undoubtedly one of India's finest forest officers, S.E.H. Kazmi is currently posted as the Field Director of Palamu Tiger Reserve. He can be contacted on his email id : kazmi_seh56@yahoo.com



HOW THE TIGER CHANGED HIS COAT

By Dr. L.A.K. Singh

Color aberrations in tigers has fascinated naturalists, conservationists, wildlife biologists and laymen alike since time immemorial. When we talk about the body color of a tiger, we mean the iconic yellow or tawny coat with bold black stripes. Variations in the coat of 'normal-colored' tigers are attributed to the geographical region they occupy, the forest-habitat they dwell in, and perhaps the season as well. These attributions are, however, not sufficient to explain about the occurrence of at least fourteen known types of body coloration in tigers, and a possibly larger intermediary range within these. These aspects of tiger biology, which need to be explored further, were first discussed in detail in "*Born Black : The Melanistic Tiger in India*", a

booklet I authored more than a decade ago.

The most well-known, well-documented and well-researched aberration among all is the white tiger. Tigers of other coloration have, however, never been discussed in as much detail as the white tigers, perhaps because they were even rarer than the white tigers.

The curious case of melanistic tigers has been a matter of great debate and intrigue. There are believed to be only 3-4 records of completely black tigers from the Indian subcontinent — one was found dead in Chittagong in 1846, another was found dead in the Lushai Hills and one was seen in Bhamo district of what is today Myanmar in c. 1928.

There was another unconfirmed report of a black tiger from *Cardamom hills* in 1895. Unfortunately, neither could the skins of the two dead animals be saved, nor could any photographs of the animal in these four cases be obtained.

Then came fresh reports of alleged sightings of black tigers in an east-central Indian forest – the *Similipal Tiger Reserve* in Orissa. First reports of the aberrantly colored tigers of Similipal came in the early 1970s. However, most of those early reports were dismissed as being the observer's imagination, a trend which continued right up to 1993; and thus these aberrant tigers of Similipal remained ignored and undocumented. But then an incident that occurred in July 1993 in the valley of river *Bhandan* changed it all.

BORN BLACK : THE SIMILIPAL STORY

On the 21st of July, 1993, at around 10 a.m., a young melanistic tigress was killed in "self-defense" by a tribal boy named *Salku*. This incident took place in a village called *Podagad* on the western periphery of the Similipal Tiger Reserve (Prusty and Singh, 1996). The young tigress had injured "4-5 goats" during the previous week. Every time it injured a goat, the victim was taken away by the villagers, thus forcing the hungry animal to attack

again. Then on the night of 20.7.93, this tigress entered the cow shed of *Surai Besra*, aged 67 years. On hearing sounds of great commotion coming from his cow shed, Surai went in there to check on it. As soon as he entered the shed, the tigress charged at him and injured Surai on his face. In the mean time, other members of his family woke up and started shouting at the tigress. Faced with a hostile crowd, the tigress moved out of the shed and melted away into the night. Then at around 10 a.m. the next morning, Salku, Surai's son sighted the tigress in the adjoining maize fields. The tigress yet again charged towards Salku, who ran into his house and got his bow ready. He then aimed at the tigeress from his house and shot a volley of arrows on the big cat. Three of his arrows hit their mark, and the tigress lay dead.



Carcass of the young melanistic tigress killed at Podagad village, Similipal Tiger Reserve on 21st July, 1993.

Facing Page : Peter Jackson with the skin of a melanistic tiger that was recovered during a seizure in South Delhi in October, 1992.



Carcass of the melanistic tigress killed at Podagad, Similipal.

Once the villagers were sure that the tigress was dead, they went near the body to have a look. Everybody was taken aback when they saw this tigress up close, the stripes on her coat had merged to form large blotches of black on her flanks and underside, while her back was almost completely black. The Forest Department was then called in, and they took the dead animal into their custody. Even they had never seen anything like this. We noted the different measurements of the dead tigress which were as follows (Singh, 1999):

Nose tip to tail tip (Body length): 195.5 cm

Head (Nose tip to ear line): 23.0 cm

Tail length: 70.0 cm

Height at front shoulder: 63.5 cm

Upper canine gap: 6.5 cm

Lower canine gap: 5.5 cm

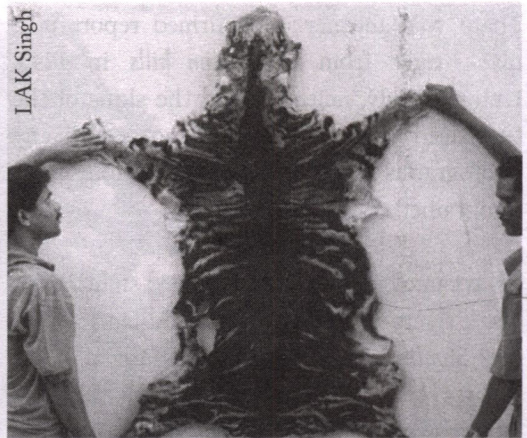
Length of canines: 2.5 cm

Pug length:

Hind-left: 10.2x7.6 cm, Hind-right: 10.7x7.6 cm

Pug length:

Front-right: 9.8x8.1 cm, Front-left: 9.2x9.0 cm



Skin of the melanistic tiger killed at Podagad, Similipal Tiger Reserve

There have been many reports of sightings of melanistic tigers in Similipal since then. Recent camera-trapping exercise in the tiger reserve has captured a few images of such tigers which have been documented by the *Orissa Wildlife Organisation* (Pattnaik, 2008).

And even though today Similipal is believed by most to be the only forest in India which has established presence of melanistic tigers; this belief is not entirely true. Few know that in March 1997, a melanistic tiger was also sighted in *Satkosia Gorge Sanctuary* (part of *Satkosia Tiger Reserve*) in the (former) *Dhenkanal* district in Orissa. However this



The underside of the Podagad tigress was almost completely black



A melanistic tiger camera-trapped at Similipal Tiger Reserve during a recent tiger census sighting wasn't followed up and no subsequent reports of this tiger have come to my attention since.

It is also worth mentioning here that a skin of a melanistic tiger was recovered from smugglers in October, 1992 in South-Delhi during a seizure. The skin measured eight and a half foot (259cm) and was displayed at the National Museum of Natural History, New Delhi in February 1993. The source of the skin is not known.

THE TIGER'S COAT

Following the incident of July, 1993 (Prusty and Singh, 1996), information on tigers with aberrant coloration was collected from Similipal and elsewhere. This was supported with data gathered from tiger-rearing facilities in Florida, U.S.A. and additional information was sourced from published literature. All this eventually led to a research on the subject

supported by WWF-India and the publication of the "Born Black..." report (Singh, 1999).

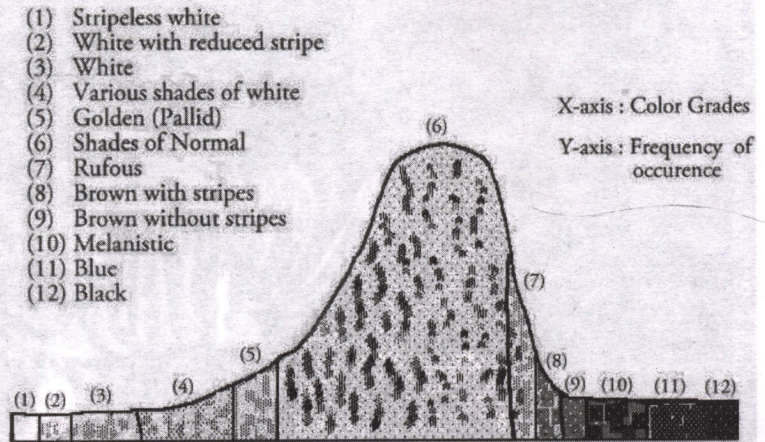
Normally, the tiger's coat displays a combination of three colors — white, yellow and black. The background color of the body is controlled by a set of 'agouti' genes and their alleles. 'Tabby genes' and their alleles control the stripes. Built within the two series (background and stripes), some genes determine the location and quantity of expression of the three main skin colors viz. white, yellow and black. When these genes are not expressed appropriately, it results in the absence of any of these colors and thus leads to color variations in tigers.

The various forms of coloration — and these colors appear to occur in the pattern of a continuous distribution curve (Fig. 1) — now known in tigers are as follows :

- 1) Stripeless White Tiger

- 2) Tigers with reduced stripe on white background.
- 3) 'Lighter' White Tigers
- 4) 'Darker' White Tigers
- 5) Golden (Pallid)
- 6) Normal (light yellow)
- 7) Normal
- 8) Normal (deep yellow)
- 9) Rufous
- 10) Brown with dark stripes
- 11) Brown without stripes
- 12) Melanistic
- 13) Blue
- 14) Black

BODY COLORS KNOWN IN TIGERS



Normal Distribution Curve showing natural occurrence of variable color patterns in the wild gene pool of *Panthera tigris*

Figure 1

BIOLOGICAL IMPLICATIONS

All colors other than the 'normal' are considered to have mal-adaptive value in the wild. Colour appears to be related to the body size as well. It has been observed that white tigers have a large body while black tigers were usually diminutive.

The appearance of tigers with aberrant coloration can be expected as a regular occurrence in some places but overall an extremely rare natural phenomenon. Color aberrations are more likely to occur if the local population is distinct and has adapted to its local environment or if the population has decreased to such an extent that it leads to inbreeding. In populations where inbreeding has a longer and stronger influence, the appearance of aberrants would tend to become more frequent. The reasons due to which there have been very few reports of aberrants over the years are casual dismissals of reports as observational errors and the fact that most aberrantly colored animals in a population of normal individuals are usually eliminated at a very young age.



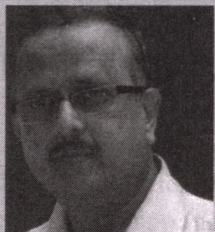
Atleast fourteen types of body colourations have been recorded in tigers

Thousands of years of evolution and the struggle for existence mediated by natural selection, ensures that most individuals in a species do not have physical attributes that are aberrations. Therefore, natural elimination of aberrants from the population may be effected through unsuitable structural or physiological organization. Such phenomena can only be studied in the wild as they may not be clear in captivity where adaptive values (of soft features, like body colour) have little significance.

Most cases of color aberrations may also point towards a buildup of 'inbreeding depression', which is known to have grave conservation implications. The discovery of this co-relation also calls for greater investigation towards understanding the genetic basis of tiger conservation. Threats to tigers continue to increase exponentially because of a growing human population that exerts huge pressure on the last few remaining tiger habitats. As tiger populations become small, fragmented and isolated, we might expect to see a higher frequency of such aberrations. And thus, securing large and contiguous patches of forest with corridors which would help improve gene flow between tiger populations, is absolutely critical if tigers are to survive in the long run.

ACKNOWLEDGEMENTS

I wish to thank the following individuals and organisations who have supported the entire study in various ways. The Orissa State Forest Department (Wildlife Wing), Field Director and staff of Similipal Tiger Reserve, Dr. Peter Jackson, Chairman (IUCN Cat-Specialist Group), Dr. J. Marcan (USA), Ms. Sally Walker and Sri Sanjay Molur of Zoo Outreach Organisation, Dr. Karl P. N. Shuker (England) and WWF-India.



Dr. L.A.K. Singh: Dr. Lala Aswini Kumar Singh is one of India's most reputed and experienced wildlife scientists, and has worked with the Orissa Forest Department as a senior Research Officer for 35 long years. His breadth of knowledge and work is unbelievable. With over 200 published papers to his name, he has worked on tigers, leopards and elephants in Similipal Tiger Reserve and Satkosia Tiger Reserve ; and on crocodiles, gharials, otters, freshwater turtles and gangetic dolphins in National Chambal Sanctuary (M.P./Rajasthan/U.P.) & Satkosia (Orissa). He has worked on preparing the management plans for Similipal and Satkosia, has made a number of valuable additions towards refining the 'pug-mark technique' for monitoring tigers and leopards, and is always consulted on any wildlife related issue in Orissa. He is a Life Member of BNHS, and WPSI ; and a member of the IUCN/SSC Crocodile Specialist Group (1982 - present), South-Asia Reptile & Amphibian Specialist Group (1989 - present), Conservation Breeding Specialist Group (1997 - present), and many more. He can be contacted on his email id : laksinghindia@gmail.com

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BIRDSONGS FROM THE LAND OF DAWN-LIT MOUNTAINS

By Prosenjit Das Gupta



William Laurence

My love affair with north-east India's wildernesses began way back in 1992. Even though by then I had already been visiting and documenting central and east-central India's wildlife for more than two decades, what struck me on my first visit to this area was the breathtaking landscape, the untouched forests, the pristine rivers and an unbelievable biodiversity that includes some of the rarest and least-known mammals and birds. Over the years, I've been lucky to have visited almost all the major protected areas in the 'seven-sister states'. The following is a report of my recent trips to Arunachal

Pradesh and upper Assam over the last year and a half.

My first stop was Nameri Tiger Reserve in Assam that lies along the foothills of East Kameng district (in Arunachal Pradesh), just across the *Jia Bhoreli* or Kameng river. Nameri is a birdwatcher's paradise and is one of India's most bio-diverse protected areas. Nameri's star attraction is the critically endangered and perhaps India's rarest bird, the White-winged Wood Duck (*Asarcornis scutulata*). These lush green forests are perhaps a birdwatchers best bet at sighting a

White-winged Wood Duck.

The population of this large duck which was once distributed throughout south-east Asia has now whittled down to a mere 800-900 birds, with India being home to almost half of this population. Infact, my first photographs of the White-winged Wood Duck taken in 1994, were pooh-pooed in nature club circles of Calcutta before they were authenticated by a senior scientist of the *Zoological Survey of India*.

The habitat of the White-winged Wood Duck are the narrow winding streams with "beels" or shallow lakes, in the middle of tall grass and thick forests that can only be approached by foot or on elephant-back. It is very difficult to approach the bird without alarming it; the White-winged Wood Duck certainly likes to protect its privacy!

In March 2011, accompanied by a couple of bird-watching friends, I was lucky enough to



Umresh Srinivasan

The beautiful Red-Headed Trogon

sight the White-winged Wood Duck on three occasions and take photographs again. Nameri is also home to many other species of birds, such as malkhoas, Green Pigeons, Maroon Orioles and the magnificent hornbills. There was a time when one could see about 20 Rufous-necked Hornbills fly overhead. Sadly the large-scale clear-felling of forests that once ranged all along the foothills of western Arunachal Pradesh, have now made such sights few and far between.



Umresh Srinivasan

Incidentally, the Jia Bhoreli river is also home to the golden mahseer (*Tor Putitora*) and till very recently the local administration permitted mahseer fishing by rod-casting – but strictly on a catch-and-release basis. This facility has been withdrawn recently, and thereby hangs a tale.

In March 2012, I visited three amazing wildernesses – the Dibang Valley

North-East India : A Biodiverse Eden

As is well-known, north-east India is one of the richest areas in India in terms of bio-diversity. This area reportedly contains more than one-third of the country's total biodiversity. The region has at least 7,500 species of flowering plants, 700 species of orchids, 58 species of bamboos, 64 of citrus, 28 conifers, 500 mosses, 700 ferns and 728 lichen species. The region is equally rich in faunal diversity. An estimated 3,624 species of insects, 50 molluscs, 236 fishes, 64 amphibians, 137 reptiles, 541 birds and 160 mammalian species have been so far described in a report published in 1998.

The north-east also has some of the finest wildernesses in India, stretching from Manas Wildlife Sanctuary in the west, the Nameri National Park, Pakke Wildlife Sanctuary and Kaziranga National Park somewhere in the middle (though on either side of the Brahmaputra River), to the Dibang valley, the Dibru-Saikhowa sanctuary and the lastly, the Namdapha National Park practically bordering Myanmar. And this is leaving out of account some other fine sanctuaries in Assam.

area in the Mishmi hills of Arunachal Pradesh, the Dibru-Saikhowa Wildlife Sanctuary, which is known for the endemic Black-breasted Parrotbill, and the famous Namdapha Tiger Reserve that lies along the Noa Dihing river in the hills of Changlang district of Arunachal.

The approach to Dibang valley area is not for the faint-hearted. It requires crossing the

Brahmaputra on a motorised ferry-boat that includes the vehicle standing on two planks held in place by chocks, and then crossing about 5-6 kilometres of "chaurs" without any fixed roads. The bright side of this arduous journey however was the sight of the fine "old-growth" forests and a spectacular diversity of birds.

Some of the Necklaced Laughingthrushes were practically coming into the compound. As were Mountain Bulbuls, Olive Bulbuls, Brown-throated Needle-tails, Black Eagle and Yellow-billed Blue Magpies. Incidentally several bird species were found close to secondary growth forests recovering from *jhum* or slash and burn cultivation. Many species of barbets and tits, and thrushes (Black-faced Laughingthrush, Chestnut-crowned Laughingthrush, White-crested Laughingthrush) greeted us in good numbers. On one fruiting tree we counted



A rescued Mishimi Takin (*Budorcas taxicolor*) in Dibang Valley

Tana Tapi

as many as 20 Hill Barbets, and groups of 10-15 laughingthrushes. We heard the Ward's Trogon but unfortunately did not sight it. The highlight of the Dibang valley trip was the sighting of the Burmese sub-species of the Hoolock Gibbon, which differs from the Indian sub-species in the white marking over the eyes. Apparently these crossed over from northern Myanmar across the upper reaches of streams, including the Lohit river.



The author saw a Hoolock Gibbon (*Hoolock hoolock*) at Namdapha

Dibru-Saikhowa Sanctuary is situated on the southern bank of the Brahmaputra and consists entirely of riverine tracts formed by the Dibru river delta as it joins the Brahmaputra. One has to visit the sanctuary in motorized boats and zig-zag through the channels to explore this unique ecosystem. Here dwell the Black-breasted Parrotbills that inhabit the tall "elephant grass" standing about 10 feet high. Unfortunately luck was not on our side and we couldn't see one of these beauties. We, however, sighted the Sultan Tit in some forested tracts, and river birds such as the Osprey, kingfishers and the Small Green Heron.

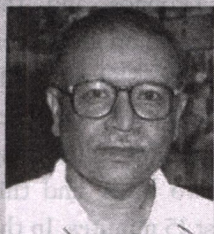
Our final destination was one of India's biggest and most remote tiger reserves which still remains largely-unexplored - the Namdapha Tiger Reserve. The treacherous approach route is via the Tinsukia-Magherita-Ledo-Miao road. This Protected Area (PA) is

also perhaps India's most varied PA in terms of habitat types (which ranges from the lowland tracts lying at about 200 metres to the high and mighty Himalayan zone at over 4000 metres). Naturally, Namdapha is home to an unmatched diversity of fauna and flora. In the lower reaches, the bird species are similar to the Dibang valley, except that the banks of the Noa Dihing river had sizeable flocks of the Small Pratincoles, Large Cormorants, Sand Martins, and a few individuals of the Black-backed Fork-tails. An added bonus was the sighting of two critically endangered Himalayan Griffon Vultures, quite far from their usual "beat". The "lifer" for me, however, was the sight of a pair of Pied Falconets, perched atop a high burnt-out tree. These falconets were possibly smaller than a bulbul! Then there were lovely sightings of the Pin-tailed Green Pigeon and the Broad-billed Roller. Namdapha also gave us the usual sighting of the Great Indian Hornbill. Finally, on the day we were

returning, we heard and sighted a Hoolock Gibbon (the Indian sub-species this time). This made our hearts lighter, as Namdapha has lost a sizeable population of its famed mammalian and avian fauna due to illegal hunting and encroachment. Nonetheless, we returned very satisfied.

A few weeks after we returned, I was glad to read an uplifting piece of news about Namdapha. The Namdapha Forest Department and *Aaranyak*, a wildlife NGO based in Guwahati had conducted a joint camera-trapping survey of about 300 sq.kms. of the park (a fraction of the -2000 sq.km. tiger reserve). And they had succeeded in capturing some incredible images of as many as 30 mammal species, inspite of working in very difficult field conditions – where they faced security threats from poachers. The lithe leopard, the elusive clouded leopard, the little-known marbled cat, wild dogs, Malayan sun bear, and even elephants which were thought to have been wiped off from the park, they were all there. The muscular gaur, serow, goral, the rare spotted linsang, five species of civets, and many other rare mammals were caught before the hidden cameras. The cherry on the cake however was the first ever image of a tiger from Namdapha – this came at a time when conservationists had started suspecting that Namdapha had lost all its tigers. And even though the firings at the survey team and theft of equipment highlight an almost non-existent wildlife protection mechanism, these lovely set of images are a proof of the tenacity of wild animals. They provide a ray of hope for this unique wilderness. Perhaps these images are one last cry for help made by Namdapha's wild denizens, a last call to save their homes before it's too late!

(The views expressed in this article are the author's own)



Prosenjit Das Gupta: Prosenjit Das Gupta, a critically acclaimed author of 6 books including his magnum opus *Walks in the Wild* (Penguin Publications, 2002), has scoured the forests across the length and breadth of India for over forty years now. Educated at St. Xavier's Collegiate School and Presidency College in Kolkata, he worked in the trade and services industry from 1966 until his retirement a few years back. His regular forays to - his first love - the Palamu Tiger Reserve right from the early 70's to the mid 80's, initiated him into the field of wildlife and forest conservation. He has a keen interest in wildlife photography and travel, and apart from being one of India's most experienced naturalists, he also possesses deep knowledge and understanding of India's tribal people and their customs. His latest book, *After Elwin: Encounters with Tribal life in India*, explores this subject at length. Mr. Das Gupta's articles on wildlife conservation and folk crafts have been published in a number of leading newspapers, magazines and journals. He can be contacted on his email id : pidiji@yahoo.co.in

STRANGE SHIKRA BEHAVIOUR

By Haseeb Shaikh

The following note was written based on the observations recorded by my friend Yatin Parikh (school teacher and wildlife photographer) and me, Haseeb Shaikh, at around 5:30 pm on 17th June 2012 at the GEER foundation's Aranya Park in Gandhinagar, Gujarat.

It was observed on hearing the chattering of a pair of Black Drongos (*Dicrurus adsimilis*) over their nesting site on the Bawal tree (*Acacia nilotica*), that the pair had been agitated by a Shikra (*Accipiter badius*) which had perched itself on a branch just above the nest which housed a Drongo hatchling. The Drongo pair would constantly fly over the Shikra to repel the predator away from their nest. As Yatin Parikh raised his camera to get a picture, just then the Shikra launched itself into the Drongo nest, picked up the Drongo chick and flew away holding the young one in the tight grip of its sharp claws. It flew and perched itself on another Bawal tree about 20 meters away from the nest. The Shikra then floored the Drongo chick between its claws and the branch of the tree. The parent Drongo pair came after the Shikra and kept on pestering it by attacking it hoping that the predator would eventually give up its prey. The Shikra, however, stood his ground and flew off to a new position. Letting out sharp calls, he began puncturing the hatchling with his sharp beak.

Interestingly the Drongo parents were joined by a Red Wattled Lapwing (*Vanellus vanellus*) who gave out loud calls and started circling

above the Shikra. This evidently disturbed the Shikra, and he responded by letting out sharp cries towards the Drongo pair and the Lapwing. The Shikra stopped eating the hatchling which was still alive and carried his prey to another Bawal tree about 15 meters away. This time around, the Shikra perched itself lower on the tree and once again began puncturing the hatchling. The hatchling stopped moving and was dead within a minute or two. The Shikra now started plucking the newly grown feathers of the hatchling.

Meanwhile we noticed that a pair of Red Vented Bulbuls (*Pycnonotus cafer*) had now joined the Drongo parents and the Lapwing, thus adding to the defense of the already dead Drongo hatchling. The Shikra was feeding on its meal at a very slow pace due to the constant pestering of Drongos and the Bulbul pair who would fly and hop around on branches just overhead of the Shikra, while the Lapwing was calling out loud circling over the tree. The annoyed Shikra took long intervals between every two bites, and this drama continued for almost 15 minutes. In the meantime, Yatin clicked a few photographs as a documentary evidence.

As I was a part of a nature trail on birding at the Aranya Park, I had to leave Yatin Parikh alone to record the happenings on his camera. Yatin later told me that about five minutes after I left, the Shikra picked up the remains of the hatchling and surprisingly flew back to

the Drongo nest and dropped the remains into the nest. I was extremely surprised to hear this strange yet extremely interesting behavior by the raptor.

So, there were two interesting observations made on that day :

- 1. The fact that Drongo pair was joined by the Lapwing and the Bulbul pair in the ultimately unsuccessful defense of the Drongo chick.
- 2. And then the strange Shikra behavior of dropping the remains of the dead and half eaten chick back into the same nest from where it had been picked up.

TAKE THAT! : A FISH SQUARES OFF AGAINST HIS PREDATORS

By A.M.K. Bharos

This is a pretty old note that I wrote more than a decade ago. It was the month of August, and the year was 1999. The heavy monsoon rains had created a shallow, but sizeable water logged area behind our residence in Raipur, Chhattisgarh. I noticed a variety of fishes of different sizes swimming about in this pool. And with such abundance of prey, Pied Kingfishers (*Ceryle rudis*) and Common Kingfishers (*Alcedo atthis*) were having a field day. However, it was a variety of cat-fish, locally known as 'Bhunda' (*Channa marulius*) whose strange behavior caught my attention and is the subject of this note.

On 8th August 1999, I observed an adult Indian Pond Heron (*Ardeola grayii*) fishing on the edge of the pool. Within a few minutes, it had caught hold of an approximately 100mm long fish, but was struggling to swallow it. After a few minutes of struggle, the fish managed to slip back into the water. The Heron continued its vigil and was about to tread further ahead into slightly deeper water, when suddenly two *Channa marulius*, each about 250 mm in length, jumped out of the water and struck the Heron on his chest. The two fishes, which had fallen on the grass floor after striking the Heron's chest, then quickly retreated back into the water. As I continued watching this interesting battle, it turned out that this wasn't a one-off act of aggression; rather this brazen attack on the predator was repeated thrice. Whenever the Heron would attempt to

approach the water margin, it would be attacked by these two fishes. Ultimately, the Heron gave up the hunt and departed from the place.

Two days after this face-off, on 10th August, I once again saw a large Bhunda attack its predator. At the receiving end this time, was an Intermediate Egret (*Egretta intermedia*). Using the same method of attack, the Egret was eventually driven away from the waters by this belligerent cat-fish.

I found this bold aggressive behavior of *Channa marulius* towards its predator very interesting, and the purpose of this note was to record this incident to know if this was a localized behavioral feature or has it been observed elsewhere too.

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UN designates Western Ghats as World Heritage Site

The Western Ghats has made it to the coveted list of World Heritage Sites. The World Heritage Committee, meeting at St. Petersburg in Russia, decided to inscribe 39 serial sites of the Western Ghats on the World Heritage List on Sunday night.

"The Western Ghats was inscribed under criteria 9 and 10 of the Operational Guidelines of the World Heritage Convention," Vinod B. Mathur, Dean of the Wildlife Institute of India, told *The Hindu* from Russia.

"The discussion on the Ghats witnessed representatives from 17 nations — Algeria, Cambodia, Columbia, Estonia,, Ethiopia, Iraq, Japan, Malaysia, Mali, Mexico, Qatar, Russia, Senegal, Serbia, South Africa, the UAE and Thailand —coming out strongly in favour of India. The Indian delegation aptly responded to a range of questions, clarification and amplifications sought by the members of the World Heritage Committee," Dr. Mathur said in a communication.

Courtesy - The Hindu, Kochi, July 2, 2012

ZSI Scientists Discover Bird Species from Great Nicobar Island

A team of scientists of Zoological Survey of India (ZSI) here are presently inventorying the fauna communities of Great Nicobar Biosphere Reserve (GNBR) under the man and biosphere programme of UNESCO with the sponsorship of Ministry of Environment and Forests, GoI. The GNBR is one the 17

biosphere reserves designed in India. The results of the recent survey conducted by ZSI in GNBR discovered a new species of bird *Rallina* (Water Rail or Crake). For the convenience of the future study, this species has been named as 'Great Nicobar Crake'.

Scientists said that, the species under *Rallina* is a very rare and data deficient group of birds, according to IUCN status. So far 8 species under the genus *Rallina* have been reported from Australian and Asian continents. Among them 3 species are found in India including A & N Islands of which Andaman Crake (*Rallina canningi*) is endemic to Andaman.

Courtesy - www.conservationindia.org, July 27, 2012

Supreme Court bans Tourism in Tiger Reserve 'Core Zones' ; Tours Operators unhappy

The Supreme Court in India has ordered a ban on tourism in 'core zones' of more than 40 of the country's central government-run tiger reserves. In a landmark ruling, it warned that states that fail to implement the ban face contempt proceedings and fines. The court imposed fines of 10,000 rupees each on six states for not complying with its earlier tiger protection directives. Conservation groups have welcomed the ruling, describing it as a significant development.

The court was hearing a Public Interest Litigation petition filed by conservationist Ajay Dubey which sought the removal of commercial tourism activities from the core or

critical tiger habitats in tiger reserves.

Ninety travel operators under the banner of Travel Operators for Tigers (TOFT) have expressed their unhappiness at the Supreme Court order disallowing tourism activity in core areas of tiger reserves.

Expressing his anguish over the judgment, Dr Goverdhan Rathore, a lodge owner and son of the legendary conservationist Fateh Singh Rathore, expressed surprise that the Supreme Court has chosen to disregard clear evidence that "wildlife tourism in Indian tiger reserves was not harming tigers".

Mr Rathore cited examples of Corbett, Ranthambore, Bandhavgarh reserves where tiger numbers have gone up even as tourism figures have also increased in contrast to "unseen and unloved sanctuaries" which have lost their tigers and wildlife due to poaching and neglect.

Courtesy - www.asianage.com , www.bbc.co.uk, July 24, 2012

Govt relax norms; lakhs of tribals can now claim forest land

Thousands of tribals living in forests across will now be able to claim land as Tribal Affairs ministry on Thursday relaxed norms in a bid to thwart attempts of the forest department officials to reject the claims.

As per the new rules notified under the Forest Rights Act, the ministry had allowed tribal and forest dwellers to submit all available evidence to claim land in forest areas. The

forest department officials had rejected lakhs of land claims in states such as Rajasthan, Madhya Pradesh, Chhattisgarh and Maharashtra on the ground that their names were not in their official records.

Tribal affairs minister Kishore Chandra Deo said the new rules governing the Forest Rights Act (FRA) for empowering Scheduled Tribes have been finalised and will be put before Parliament in the first week of Monsoon session, which begins from August 7. "We have introduced 60 changes in the present act after taking into account various factors," he said.

Another notable change is making the tribal and forest dwellers control the minor forest produce, which till now have been under the control of the state governments. The new rules directs the state governments to allow those living in forests to collect the minor forest produce (which is everything except timber) and stipulate a minimum support price to buy the produce from them.

Courtesy - Hindustan Times , New Delhi, July 13, 2012

King cobra under threat, put on red list

CHENNAI: The King Cobra, whose numbers have been decimated in the Western Ghats and parts of Southeast Asia where the magnificent snake once thrived, has been declared a vulnerable species and placed on the red list of the International Union for Conservation of Nature (IUCN).

The King Cobra (*Ophiophagus hannah*) is listed as vulnerable due to a loss of habitat and

and over-exploitation for medicinal purposes," the report adds. The King Cobra, a religious icon in India and the country's national reptile, is the world's longest venomous snake. The King Cobra is found in densely forested areas of Karnataka, Tamil Nadu, Kerala, Goa, Andhra Pradesh, Orissa, West Bengal, Sikkim, Assam, Meghalaya, Arunachal Pradesh, Mizoram, Manipur and the Andaman Islands.

Courtesy - The Times of India, Chennai, July 2, 2012

Great Indian Bustard on verge of extinction

JAIPUR: It may soon be the end of the Great India Bustard (GIB), the state bird of Rajasthan. Repeated apathy of the government and a lack of will has pushed this bird to the brink of extinction in the desert state. Even the International Union for Conservation of Nature (IUCN) Red List 2011 of threatened birds has classified GIB as 'Critically Endangered,' the highest level of threat. Currently, there are just 250 GIBs in the country.

The winter count of the bird in the state was registered at 89, a mere shadow of the pride that the state held once for having more than half of its entire population in the country. The bird, found only in India, has its presence also in Madhya Pradesh, Gujarat, Andhra Pradesh, Maharashtra and Karnataka.

According to Rajpal Singh, the state coordinator of the World Wildlife Fund (WWF) for Nature, which conducts the

survey along with the state forest department, the bird is now mainly confined to the desert with just one or two found in Ajmer, an area that once had the bird in abundance. Even the grasslands of Bhilwara and Kota have only a few of these birds.

Singh blames the lack of will by the government in protecting the bird and in saving its habitat as the reason for the gradual disappearance of the bird.

Courtesy - The Times of India, Jaipur, July 7, 2012

Forest officer single-handedly reclaims 6,000 acres in 3 years

In June 2008, when he took over as Nenmara Divisional Forest Officer in Kerala, P. Dhanesh Kumar was widely seen as a hunted man.

His daring interventions as Mananthavady range officer had got him into trouble with politicians and the ganja mafia.

Quotation gangs were unleashed against him. He was given police protection and an attack on the Mananthavady range office left a senior superintendent seriously injured.

But if anyone expected him to lie low in the face of the threats and injuries, he soon proved them wrong. Within a month of taking over as Nenmara DFO, the officer launched a one-man operation that environmentalists now refer to as 'Operation Clean Nelliampathy'. Between June 2008 and July 2011 he dug up documents, fought multiple court battles and suffered deep physical and emotional wounds to

reclaim over 6,000 acres of illegally occupied forest land in Nelliampathy, exposing lease violations of 32 estates spread over 4,000 acres in the process.

Courtesy - www.asianage.com, Jun 17, 2012

Nepal records increase in tiger population

KATHMANDU: In encouraging news on the wildlife front, Nepal has witnessed a jump in tiger population over the last two years during which the numbers of the wild cat went up from 155 to 176.

The latest tiger count made public by WWF Nepal shows an increase of 21 tigers since 2010, an increase of 15 per cent.

The rapidly dwindling population of the tigers has turned out to be a major worry for wildlife conservationists around the world, including in Nepal. In 2000, Nepal was home to over 350 tigers, but the numbers plunged to 121 in 2008.

The latest report brings some good news to conservationists and authorities who have been trying to fight the menace of poaching.

Courtesy - PTI, Kathmandu, Jun 29, 2012

Gir lions are nation's property, concedes Gujarat government

The six-year-long battle in the Supreme Court over shifting of the Asiatic Lions from Gir sanctuary to Madhya Pradesh's Kuno Palpur Sanctuary saw an interesting twist on

Monday. During the hearing on a plea related to the relocation of Asiatic Lions to Kuno-Palpur Sanctuary of Madhya Pradesh from Gir National Park, the Gujarat government agreed that wildlife is not the 'property' of any state but belongs to the country.

Senior counsel for the petitioner in the case, Raj Panjwani says, "This, in effect means that the state has agreed for the translocation of the lions out of Gujarat, if wildlife experts confirm that Kuno is prepared to receive the big cats. The state's counsel said that if the security and prey base measures are fulfilled, we have no objection."

Speaking on condition of anonymity, a senior forest officer from Gujarat informed DNA, "The lions should be relocated scientifically. We can move them if it is affirmed that Kuno has sufficient prey base, it is secure; there shouldn't be other pathogens, etc. We believe that the materials presented before the courts are not enough to take an informed decision on the subject."

Courtesy - DNA, Ahmedabad, Jun 24, 2012

New snake species found in AP

Forest Department officials have stumbled upon at least four varieties of snakes in the Seshachalam hill ranges that have never been sighted or reported here in the past.

Of the four, the latest one sighted on July 16 at Kapila Theertham forest abutting the city flabbergasted the researchers and officials. It is found to be of colubridae family and

'coluber' genera, but has strikingly different features from its nearest species 'coluber gracilis', which too was sighted last in Pune district of Maharashtra and Asirgarh of Madhya Pradesh, but never in southern India. The declaration of Seshachalam as a biosphere reserve has paved the way for enumeration of rare and endemic flora and fauna, before initiating steps for their conservation.

So far, the Forest Department has identified 27 species of snakes, 12 types of lizards and 13 amphibians. In the last two months alone, slender coral snake (*Calliophis melanurus*) of the elapidae family, brown vine snake (*Ahaetulla puerulenta*) of colubridae family and Eliot's shieldtail (*Uropeltis Ellioti*) of the uropeltidae family were sighted.

Courtesy - The Hindu, Hyderabad, Aug 3, 2012

Army rescues bear cub from poachers in Arunachal

Seppa (Arunachal Pradesh): Raising the bar on dedication towards the nation, the Indian Army personnel of Tenga Garrison in Arunachal Pradesh 'literally' went out of their way and rescued a bear cub from the clutches of poachers. The cub was handed over to Centre for Bear Rehabilitation and Conservation (CBRC) run by IFAW-WTI for the state Forest Department, for rehabilitation.

A number of Asiatic black bear cubs are rescued every year from various parts of northeast India. The adult bears are believed poached for body parts that find use in local as well as international markets, and the cubs if

found are taken in for illegal pet trade.

In the past six years, IFAW-WTI has hand-raised and successfully rehabilitated 29 orphaned cubs rescued from at least four northeast Indian states, in Arunachal Pradesh and Assam.

Courtesy - Wildlife Trust of India, July 27, 2012

Sariska delivers... A tiger cub is born!

The Sariska Tiger Reserve's jinx appears to be over. After an anxious wait of four long years, a tigress has given birth to at least two cubs. The first photo of the mother, ST 2, and one of her cubs — the reserve staff thinks there could be more than one — was clicked by the trap camera near the Slopka area in the Sariska range.

Perhaps never in the annals of conservation history in India was the birth of an animal offspring awaited with so much expectation and excitement — if not apprehension, considering the high stakes involved in the re-introduction of tigers in the Sariska wild.

Courtesy - The Hindu, Jaipur, Aug 9, 2012

Coal mining poses threat to India's tigers

Coal mining for electricity generation is the biggest threat to India's tigers, a Greenpeace report has warned. The report, which comes just days after massive blackouts highlighted power shortages in India, demands a moratorium on clearances for new mines. A hot-button issue in India, the question of tiger conservation pits the responsibility for

preserving wildlife against the development needs of a country that witnessed the slowest economic growth in nine years in March and where hundreds of millions continue to live below the poverty line.

India is home to more than half of the world's tigers, with 1,706 living in the wild, compared to 100,000 at the turn of the last century.

The country has witnessed an unprecedented increase in the number of new coal mines and coal-run power plants in the past five years, placing the lives of many endangered animals at risk, the environmental activists' report released late on August 8 says..

Courtesy - www.thehimalayantimes.com, Bhubaneshrwar, Aug 9, 2012

Ministry of Environment and Forests scraps radar installation project on Narcondam Island

Wildlife activists and conservation organizations have praised Ministry of Environment and Forests' (MoEF) move to reject a proposal by the Indian Coast Guard to erect a surveillance radar installation on Narcondam Island in the Andamans.

According ornithologists, the Narcondam Hornbill is found as a single population of less than 350 birds endemic to and exclusively found on the tiny (681 ha) island of Narcondam. This small and unique island harbors the world's only population of Narcondam hornbill species. Studies by the Salim Ali Centre for Ornithology and Natural History (SACON), Coimbatore had suggested

that their population is on a sharp decline.

The proposal by the Indian Coast Guard to build a surveillance radar installation and a diesel power generation station on the island drew lot of flak from conservationists. The project proposal included new constructions on the island and paving a two kilometer wide road.

MOEF's decision to reject the project was the outcome of an intensive campaign by scientists, NGOs and wildlife enthusiasts who wrote to the minister, Jayanthi Natarajan about the endangered bird and the significance of the island's biodiversity in June.

Courtesy - The Times of India, Port Blair, September 7, 2012

Ban on tourism in tiger reserves' core areas goes

The Supreme Court on Tuesday lifted the ban on tourist activities in core areas of tiger reserve forests.

This follows Additional Solicitor-General Indira Jaising's submission that on October 15 the government notified the revised guidelines for the 41 tiger reserves to be followed by States.

A Bench of Justices A.K. Patnaik and Swatanter Kumar said: "This court passed an order on July 24 that till final guidelines are issued, core areas won't be used for tourism. Now that the National Tourism Conservation Authority [NTCA] has notified the comprehensive guidelines under the Wildlife Act for tourism in and around tiger reserves,

we modify the interim order and direct that henceforth tourism activities will be strictly in accordance with the guidelines.”

The court said, “All concerned authorities will ensure that the guidelines shall be strictly in accordance with notification and requirements of guidelines are complied with before commencing tourism.” The Bench directed the States to prepare a tiger conservation plan within six months from today (Tuesday) and submit it to the NTCA.

After the ban, several States and other stake holders urged the Centre to revisit the guidelines and sought the lifting of the ban. Accordingly, the Centre filed an application seeking modification of the order. Subsequently, the court asked the Centre to hold consultations with the States and others and come out with fresh guidelines. Accordingly, the NTCA formulated fresh guidelines.

The Comprehensive Guidelines on Strategy, Tiger Conservation and Tourism in and around Tiger Reserves envisaged that 20 per cent of the core reserve area should be permitted for tourism. Shifting the focus from wildlife tourism to eco-tourism, the NTCA had recommended that a maximum of 20 per cent of the core/critical tiger habitat usage (not exceeding the present usage) for regulated, low-impact tourist visitation might be permitted by the court. It said, “In case the current usage exceeds 20 per cent, the Local Area Committee may decide on a time frame for bringing down the usage to 20 per cent. Such area may be demarcated as tourism zone and there should be strict adherence to site-

specific carrying capacity.”

Other suggestions are: “The States should enact law to regulate tiger tourism — tourist facilities; tour operators should not cause disturbance to animals; tourism infrastructure must be environment-friendly like usage of solar energy, waste recycling and rainwater harvesting etc; permanent tourist facilities located inside the core areas should be phased out in a time frame and 10 per cent of the revenue generated from pilgrim centres located in tiger reserves must be used for development of local communities.”

Courtesy - The Hindu, New Delhi, October 16 2012

Indo-Bangla pact for Sunderban tigers

West Bengal chief minister Mamta Banerjee and Bangladesh will join hands for protection of tigers in Sunderbans. The central government was able to get the West Bengal government on board with respect to having a joint monitoring and protection mechanism for Sunderban tigers. There are about 400 tigers in Sunderbans spread across West Bengal and Bangladesh but lack of coordination between the two governments has hampered conservation efforts. The agreement also provides for collaboration in training and promotion of education in tiger conservation without undertaking any activity which can dampen the unique bio-diversity of mangrove rich Sunderbans. However, the agreement will not impose any restriction on border domination activities.

Courtesy - Hindustan Times, New Delhi, September 7, 2012

THE WILDLIFE PRESERVATION SOCIETY OF INDIA

1. The aims and objects of the Society are as follows :-

- (a) To promote interest and impart knowledge regarding the preservation and conservation of all forms of wildlife, particularly among the youth of the country.
- (b) To cooperate with the Govt. of India and State Governments and with other Societies and Institutions having similar aims and objects in working for the interests of wildlife.
- (c) To assist in enforcing and actively supporting the Forests Acts ; Wild Birds and animals Protections Acts ; and Rules etc. of State Governments ; and the Indian Arms Act and Rules in so far as they pertain to wildlife. And to bring to the notice of the authorities any infringement of the same and to assist in the detention and prosecution of offenders in respect of such laws.
- (d) To advise and help the Govt. and wildlife administrators in the formation, maintenance and protection of Sanctuaries and National Parks, preservation of wildlife in general and endangered species of India in particular ; and in the introduction of exotic species into the country, rehabilitation of endangered species etc. ; and in the formulation and amendments of rules and acts, so as to conserve and increase wildlife stocks.
- (e) To raise funds for carrying out the above aims and objects; and to found and maintain museums, reading rooms and libraries of natural history in order to disseminate knowledge regarding wildlife.
- (f) To carry out publicity and propaganda for the preservation of wildlife in India by means of monographs, journals, films, filmstrips and other feasible methods.
- (g) To assist members of the Society in obtaining facilities for viewing and photographing wildlife in India.
- (h) To conduct research into the problem of wildlife management in India, and in pursuance of this, to initiate, encourage and, where possible assist in the projects on the study of threatened species and related objects and to provide reference and research facilities for such work.
- (i) To carry on such other activities which will serve the above subjects.

2. What will the membership of Wildlife Preservation Society of India entitle you to ?

- (1) You will become an active member of the growing group of wildlife enthusiasts who enjoy working for the cause of wildlife and spreading the knowledge on how to conserve India's wildlife heritage for posterity.
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- (5) You will be entitled to buy all publications of the Society at a concessional rate.
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- (7) You will be supplied " Cheetal ", the quarterly journal of the society free.

3. For membership particulars write to Honorary Secretary, Wildlife Preservation Society of India, Heritage Apartment, Flat No. 2, First Floor, 18 New Road, Dehradun, Uttarakhand - 248001.



Phone : 0135-2652410

THE WILDLIFE PRESERVATION SOCIETY OF INDIA

(Established 1958)

Heritage Apartment, Flat No. 2, First Floor, 18 New Road,
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I.....

hereby apply to be admitted as a Patron / Life / Annual / Affiliated / Institutional /
Student Member of the Wildlife Preservation Society of India.

My interests are

Name

Designation

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Date of Birth

MEMBERSHIP

All Members get Cheetal (Quarterly) Journal FREE

- | | | |
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All Communications may please be addressed to the Hony. Secretary.

Signature

Signature

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